Examining the Process of Change in Cognitive Behaviour Therapy for Treatment Resistant Depression.

Submitted by Anna Lucy Abel, to the University of Exeter
as a thesis for the degree of
Doctor of Clinical Psychology,
In May 2014

Signature: …….

Table of Contents

List of Tables Page

List of Figures Page

Author Declaration and Acknowledgements

The study was embedded in the CoBalT study. The CoBalT study was funded by the National Institute for Health Research Health Technology Assessment (NIHR HTA) programme (project number 06/404/02). The views expressed in this manuscript are those of the author and do not necessarily reflect those of the HTA programme, NIHR, NHS, or the Department of Health.

I am grateful to all who contributed to the successful running of the CoBalT trial and to all the clients who participated, to have made this research possible. I would like to thank Laura Thomas and Nicola Wiles for their support throughout the data selection process.

In consultation with my supervisors, Willem Kuyken & William Henley, I conceived and designed this study, obtained ethical approval; secured access to the data, contributed to the coding of therapy session data, conducted data management and all statistical analyses, I have authored my thesis. I thank Willem and William for their advice and support throughout this project.

I am grateful to Nora Goerg, Carly Yasinski and Beth Ready who contributed to the coding of therapy session audio-recordings for this study. I would like to thank Adele Hayes for her comments and ideas and for providing training and supervision in using her CHANGE coding system.

The CoBalT study received support from the Department of Health and local Primary Care Trusts and NHS Greater Glasgow and Clyde Health Board in meeting the excess treatment and service support costs associated with the trial. The Mental Health Research Network (MHRN), Scottish Mental Health Research Network (SMHRN), Primary Care Research Network (PCRN) and Scottish Primary Care Research Network (SPCRN) all provided additional support with the conduct of the CoBalT trial. Finally, I would like to acknowledge the following colleagues who contributed to the CoBalT trial: Nicola Wiles, Glyn Lewis, Debbie Sharp, Tim Peters, David Kessler, Sandra Hollinghurst, Katrina Turner, Bill Jerrom, Caroline Baker, Alex Burrage, Joy Farrimond, Nathan Filer, Katrina Ford, Samantha Green, Meyrem Musa, Emma Riggs and Mary Yarwood; John Campbell, Miriam Cassell, Clare Bootle, Caroline Jenkinson, Alice Garood, Rob Kidney, Holly Sugg and Rachel Winder and Jill Morrison,

EXAMINING THE PROCESS OF CHANGE

Chris Williams, June Anderson, Monica Cairns, Seonaid Cleare, Catriona Kent, Katy Park and Janice Reid.

Statement Regarding Marking Guidance

The following statement has been written under the guidance of the DClinPsy Director of Research and Programme Director:

The student joined the programme in 2010 (using the 2010/13 Research Module and Programme Handbook) and undertook a period of intercalation for maternity leave during 2013-2014. The literature review was originally written in accordance with the 2010/13 Research Module guidance (marking guidelines appended).

The review was updated in 2014 (search dates 2011-2014) following return from maternity leave, and the new Research Module guidance (implemented in September 2013) was incorporated in the updated sections of the review (see Appendix for detailed description of the methodology, in accordance with the new guidance, for the updated literature search). Only the updated sections of the literature review, therefore, adhere to the 2013/14 guidance. *A summary Table has not been included in the review as the review content does not easily lend itself to a table format, and a table was not a requirement of the 2010/13 guidance*."

DOCTORATE IN CLINICAL PSYCHOLOGY

Discontinuous Patterns of Change in Cognitive Therapies for Depression: A Review

LITERATURE REVIEW

Intended Journal: Clinical Psychology Review

Word Count: Abstract: 200

Main body of review: 4000 (excluding footnotes, figures & references)

Abstract

Depression is a significant source of suffering for many people and a major public health concern. Cognitive therapies are widely applied to treat depression and are efficacious. However, a significant proportion of people do not respond to treatment. Despite intensive research the processes underlying therapeutic change are not well understood. Literature has highlighted non-linear and rapid periods of symptom change in therapy that may help to identify causal processes of change. This review examines the literature on discontinuous patterns of change in cognitive therapies for depression. There is growing evidence to suggest that the course of therapeutic change is non-linear and supplies opportunities to test theories of change. In particular, sudden gains in depression during one therapy session interval have emerged as a robust phenomenon with prognostic significance. The evidence suggests that they reflect meaningful shifts in therapy that precipitate further therapeutic change. However, methodological limitations restrict the field and uncertainty remains about their mechanisms, antecedents and consequences. Ways forward are suggested, including for more concerted research to consider the therapeutic process from the perspectives of client, therapist and the interaction between them. Studying change in treatment-resistant populations may also offer opportunity to shed light on inhibitors and facilitators of change.

Keywords: Depression; cognitive therapies; patterns of change; sudden gains

Discontinuous Patterns of Change in Cognitive Therapies for Depression: A Review

Depression is a significant public health problem (Mathers & Loncar, 2005). It is a highly prevalent, disabling condition that typically runs a chronic and recurring course (Kupfer, 1991). It is characterised by intense sadness and loss of interest and enjoyment in activities usually valued by the individual (American Psychiatric Association, 2013). It is frequently co-morbid with physical health problems (e.g. Barefoot et al., 1996) and is associated with an increased risk of mortality (Cuijpers & Smit, 2002). Thus, depression has a huge impact on individuals and families, health services and society. Enabling access to effective therapies is an imperative for health services.

Antidepressants are often the first-line treatment for depression, however, only one-third of people respond fully to pharmacotherapy (Trivedi et al., 2006), adherence is low (Hunot, Horne, Leese & Churchill, 2007) and people often express a preference for psychological therapies (Riedel-Heller, Matschinger & Angermeyer, 2005). Clinical guidelines recommend a number of psychosocial interventions including cognitive behaviour therapy (CBT), which was considered to have the best evidence-base of psychological approaches in a recent review (NICE, 2009). CBT for depression has demonstrated good efficacy and effectiveness across a number of research studies and real-world settings (e.g. DeRubeis et al. 2005; Richards & Suckling, 2009; Wiles et al., 2012), and is widely applied to treat depression. However, a significant proportion of people do not respond to treatment (Hollon, Thase & Markowitz, 2002; Wiles et al., 2012). This highlights the need for research examining the relationship between CBT processes and outcomes in order to advance understanding of the mechanisms of change in CBT.

Kazdin (2007) asserts that after decades of research we still do not know how or why psychological therapies produce change, or equally, fail to. He notes that historically, this field of research questioning the how and why of change has been neglected in favour of pure outcome research examining whether or not change takes place. Thus, while much has already been achieved on the development, implementation and evaluation of CBT for depression, understanding of change processes is less well advanced (Kazdin, 2007). Understanding the processes and mechanisms underlying change in CBT for depression is a fundamental step in efforts to develop treatments to improve therapy outcomes (Kazdin, 2007; Llewellyn & Hardy, 2001; Medical Research Council, 2008) for the large numbers of people who seek help, and ultimately may contribute to alleviating the burden of depression.

This review first outlines the cognitive theory of depression to provide context, then aims to appraise current understanding of patterns and processes of change in cognitive therapies for depression. This encompasses a broad field and vast literature, therefore, this review focuses on illustrating a promising and developing body of contemporary research that demonstrates an association between depression outcomes and non-linear patterns of symptom change over the course of CBT. Thus, research examining discontinuities in symptom change and their concomitant change processes is reviewed and future directions for research are considered.

Cognitive-Behaviour Therapy for Depression: Theory and Evidence

Cognitive therapy for depression (Beck, Rush, Shaw & Emery, 1979) is based on Beck's (1967) cognitive model of depression. It has been subject to intensive empirical investigation and consequent evolutions over the years (e.g. Segal, Williams & Teasdale, 2002; Watkins et al., 2007*)*. Contemporary

terminology typically refers to cognitive behavioural therapies (CBT) reflecting the integration of cognitive and behavioural techniques, therefore this term will be used throughout.

The cognitive theory of depression (Beck, 1967, Beck et al., 1979) proposes that through formative developmental experiences people acquire stable cognitive schemas reflecting dysfunctional beliefs about the self, the world and the future. These beliefs may lie dormant, but are activated by relevant stressful life events. When activated, these schemas predispose the individual to engage in maladaptive information-processing styles (e.g. rumination) that precipitate depressed mood and lead to depressive behaviours that serve to maintain negative mood in a self-perpetuating feedback loop (see Figure 1). Correspondingly CBT seeks to identify and address these cognitive and behavioural processes to help a person learn more adaptive coping strategies. CBT is proposed to facilitate therapeutic change by enabling modification of core cognitive schemas, thus cognitive interventions are considered the active ingredients of change (Beck et al., 1979); this is referred to as the cognitive mediation hypothesis.

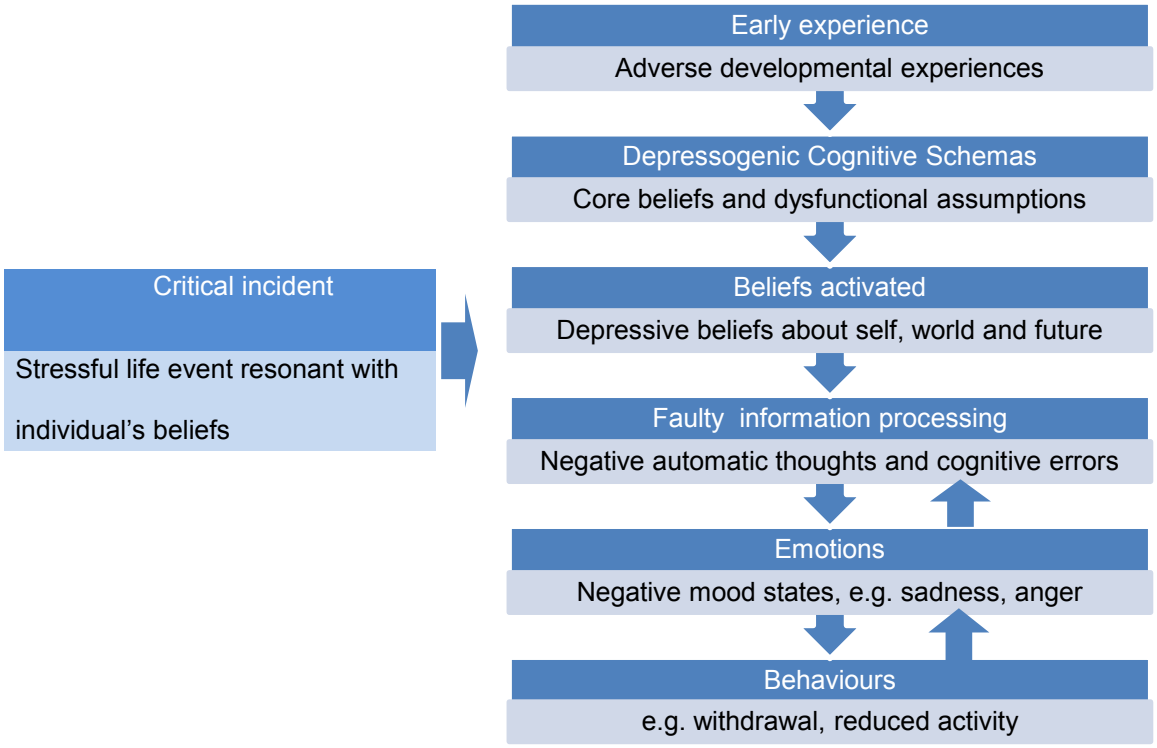


Figure 1: Illustration of the cognitive model of depression (Beck, 1967; Beck et al 1979).

CBT has demonstrated good efficacy in the treatment of depression achieving effect sizes of .85 and above (DeRubeis, Gelfand, Tang & Simons 1999; DeRubeis et al., 2005; Dimidjian et al., 2006). There is also evidence to suggest that CBT gives rise to lower rates of relapse compared to antidepressant medication (Hollon et al., 2005; Dobson et al., 2008). However, despite its efficacy, a consistent finding is that CBT is not universally effective; typically 30-50% of people do not respond to treatment with CBT (Hollon et al., 2002; NICE, 2009; Wiles et al., 2012). Furthermore, for those who do respond, relapse and recurrence are commonplace (Judd, 1997). Therefore, significant value may be gained from advancing understanding of the processes that facilitate and hinder therapeutic change.

Shape and Process of Therapeutic Change in CBT

One means to make sense of variability in outcome and to increase the effectiveness of therapy is to look more closely at the process of therapeutic change (Lewellyn & Hardy, 2001). Understanding the process of change enables putative theories of change to be tested, may advance understanding of depression and guide treatment development in order to optimize therapeutic change (Kazdin 2007; Laurenceau, Hayes & Feldman, 2007). One strand of process research has focused on temporal patterns of symptom change across the course of therapy. Longitudinal patterns of change have often been neglected in psychotherapy research where an assumption that change is gradual and linear is reflected in the use of cross-sectional aggregate data from assessment of clinical outcomes at pre- and post-treatment, but not throughout the course of treatment (Laurenceau et al., 2007).

Contemporary research investigating the shape of change in CBT has drawn attention to discontinuous patterns of non-linear change for the proposition that they mark important transition points in therapy and thus enhance capacity to isolate and study therapy processes and variables that may be causally related to change (Hayes, Laurenceau, Feldman, Strauss & Cardaciotto, 2007a). Research has identified at least three different patterns of non-linear change in CBT for depression: “sudden gains” “depression spikes”, and “rapid early responses”.

Sudden gains. Sudden gains describe large and enduring symptom improvements observed in a single between-session interval (Tang & DeRubeis, 1999, see Figure 2). Research has repeatedly shown that people who experience sudden gains in treatment report fewer symptoms of depression at the end of therapy than those who do not (Aderka, Nickerson, Bøe, & Hofmann, 2012). Furthermore, this finding has been replicated in a

range of therapy approaches and for a range of presenting issues (e.g. Adler, Harmeling & Walder-Biesanz, 2013; Bohn, Aderka, Scrieber, Stangier & Hofmann, 2013; Drymalski & Washburn, 2011; Keller, Feeny & Zoellner, 2013).

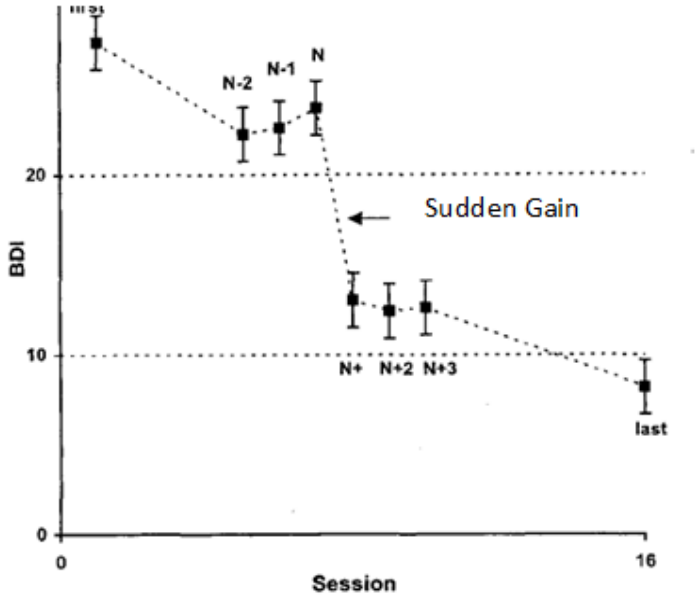


Figure 2: Illustration of time-course symptom change depicting sudden gains observed in CBT for depression. Figure taken from Tang and DeRubeis (1999).

Depression spikes. Another, emerging, pattern of discontinuous change is the "depression spike" (see Figure 3), which is described as the conceptual opposite of the sudden gain in that it refers to a large and transient worsening in symptoms (Hayes, Feldman, Beevers, Laurenceau, Cardaciotto & Lewis-Smith, 2007b).

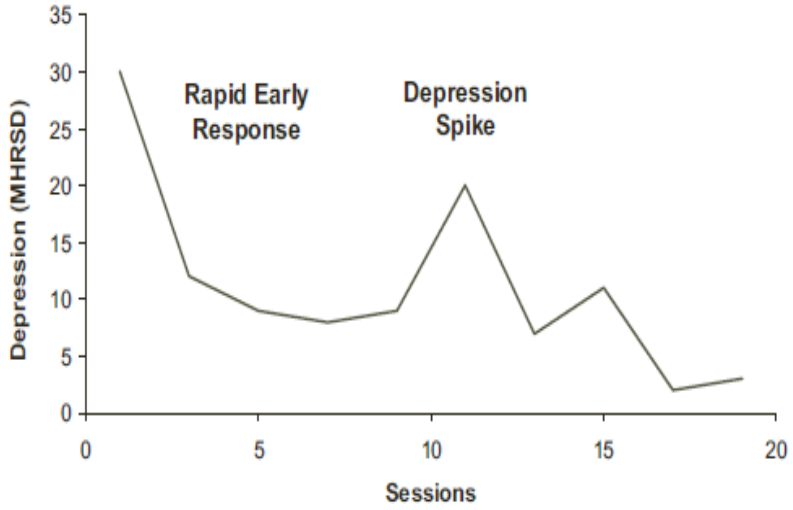


Figure 3: Time-course of symptom change over therapy, displaying the depression spike (and rapid early response). Figure taken from Hayes et al. (2007a).

Depression spikes were first identified by Hayes, Beevers, Feldman, Laurenceau and Perlman (2005) in a trial of exposure-based cognitive therapy for depression. Individual time-course data revealed the rapid early response and depression spike patterns, which both predicted improvement in depression (Hayes et al., 2007b).

Rapid early response. The rapid early response was the first non-linear pattern of change to be observed in CBT (see Figure 4). It refers to the finding that the majority of therapeutic change takes place early in therapy (e.g. Fennell & Teasdale, 1987; Ilardi & Craighead, 1994; Rush, Beck, Kovacs & Hollon, 1977) and is clinically important because people who display a rapid early response to CBT for depression go on to achieve better post-treatment outcomes (Ilardi & Craighead, 1994).

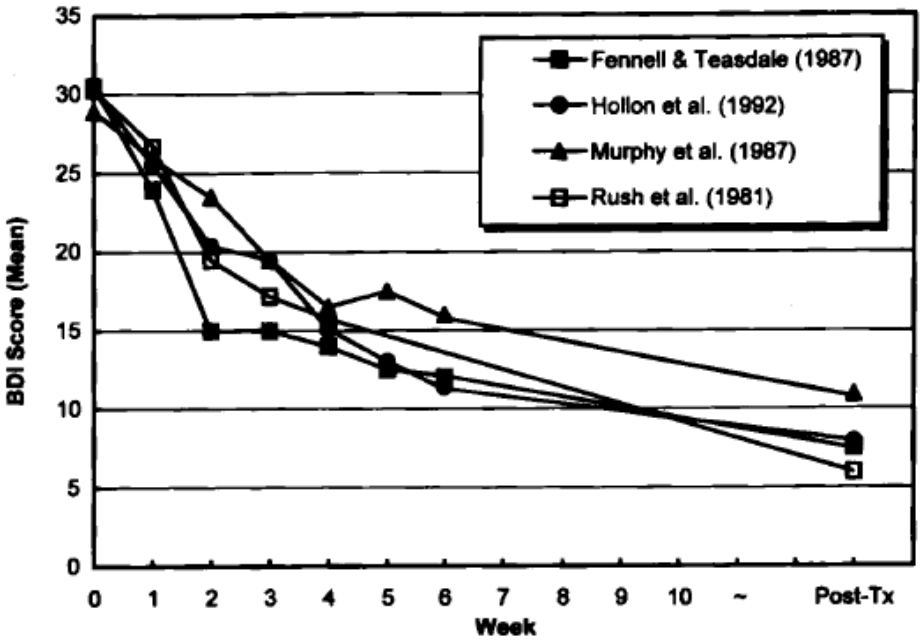


Figure 4: Temporal change in depression severity, as measured by the Beck Depression Inventory (BDI, Beck, Steer & Brown, 1996), across CBT for depression depicting the rapid early response. Figure taken from Ilardi and Craighead, (1994).

What can be learned from these patterns of change?

These patterns of change are of interest to clinical researchers for their prognostic significance across a range of disorders and therapies (Aderka, et al., 2012; Adler, Harmeling & Walder-Biesanz, 2013; Hayes et al., 2007b; Ilardi & Craighead, 1994; Keller, Feeny & Zoellner, 2013), and for their capacity to identify and focus analysis on periods of therapy that may help to identify important processes underlying therapeutic change (Laurenceau et al., 2007). Literature relating to these patterns of change and putative change processes is reviewed here.

Tang and DeRubeis (1999) hypothesised that sudden gains resulted from cognitive shifts observed in pre-gain sessions and thus proposed that they

support Beck's hypothesis of cognitive mediation as the mechanism of change in CBT (Tang & DeRubeis, 1999). Tang and DeRubeis also observed improved alliance in post-gain sessions, theorising that the cognitive shift and sudden gain triggered an "upward spiral" (p. 902) that precipitated further therapeutic gains. However, there are limitations to the interpretations that can be drawn from this study: only correlational data is provided; the reliability of the rating method was unconvincing and sudden gains did not predict reduced symptoms at 12 months and failed to predict relapse. Moreover, Vittengl, Clark and Jarrett, (2005) found that among clients who responded to treatment, CBT sudden gains did not confer added clinical benefits. Similarly, sudden gains identified by Kelly, Roberts and Ciesla (2005) in group CBT for depression were not associated with treatment outcome. However, Tang and DeRubeis (2007) countered by highlighting evidence that sudden gains generated in CBT are more stable than those obtained in non-cognitive interventions (Tang et al., 2002; Kelly et al., 2005) and revisited sudden gains using more rigorous relapse assessment procedures to indicate that sudden gains significantly reduced the risk of relapse following CBT for depression. Therefore, Tang and DeRubeis (2007) maintained that sudden gains are implicated in the preventative benefits of CBT and reflect cognitive changes.

Literature has accumulated to support the clinical and prognostic significance of sudden gains in depression (Aderka et al., 2012). Consequently, the need to identify factors that may predispose a person towards experiencing sudden gains, as well as the underlying causal processes is emphasised (Drymalski & Washburn, 2011). Such research has provided ambivalent findings in relation to Tang and DeRubeis' (1999, 2007) view that sudden gains are associated with developing cognitive insight in CBT. Studies directly

examining cognitive shifts as a precursor to sudden gains in depression have provided inconsistent results (Andrusyna, Luborsky, Pham & Tang, 2006; Kelly, Roberts & Bottonari, 2007; Tang & DeRubeis, 1999; Tang, DeRubeis, Beberman & Pham, 2005). Furthermore, sudden gains have been found to occur with similar frequency and magnitude in pharmacotherapy (Keller et al., 2013; Vittengl et al., 2005) and other non-cognitive psychotherapies (Tang, Luborsky & Andrusyna, 2002); patient-directed treatments (Lorenz, Pulverman, & Meston, 2013) and non-treatment contexts (Kelly, Roberts & Bottonari, 2007) calling into question the universality of cognitive change as a precursor to sudden gains. Others have suggested that the differential pattern of sudden gains in different therapies may indicate differential mechanisms (Jun, Zoellner & Feeny, 2013). Taken together, these findings support calls for a more trans-theoretical approach to understanding sudden gains (Hardy, Cahill, Stiles, Ispan, Macaskill & Barkham, 2005). Mechanisms other than cognitive shifts have been proposed to explain sudden gains in depression. Although, suggested mechanisms have tended to remain close to the concept of insight in one way or another. For instance, therapist interpretive accuracy (Andrusyna et al., 2006); assimilation (Goodridge & Hardy, 2009), self-evaluative processes (Kelly et al., 2007), emotional processing (Adler et al., 2013; Keller et al. 2013) and narrative coherence (Adler et al., 2013).

Limited progress has been made towards identifying factors that may predispose individuals towards sudden gains. A number of studies have failed to identify significant baseline differences between participants who go on to experience sudden gains in therapy and those who do not (Adler et al., 2013; Hardy et al., 2005; Keller et al., 2013; Kelly, Cyranowski & Frank, 2007). This

has led to suggestions that sudden gains may be better predicted by dynamic therapy process factors (Hunnicutt-Ferguson, Hoxha & Gollan, 2012).

In summary, the literature on sudden gains has accumulated to suggest that they are a relatively robust phenomenon with prognostic significance, but their mechanisms, antecedents and consequences are uncertain. Further research is needed to clarify the processes underlying sudden gains.

Hayes et al. (2005) drew on emotion theory and literature proposing emotional processing as a key mechanism in psychological interventions for anxiety (Foa & Kozak, 1986; Rachman, 1980) and endorsed suggestions that emotional processing is clinically significant in depression as well as anxiety disorders (Teasdale, 1999) to develop an exposure-based cognitive therapy for depression. The therapy was designed to target hopelessness, avoidance and rumination, and to promote activation and disturbance of the depressive network to facilitate emotional processing. Clients wrote weekly narratives of their depression to stimulate emotional processing. Emotional processing was conceptualised as “exploring and questioning issues and material related to depression with some insight or perspective shift” (p.413). Hayes et al. (2007b) evaluated the extent to which clients’ narratives demonstrated evidence of emotional processing and found that depression spikes were correlated with peak levels of emotional processing. Furthermore, when the spike occurred during the exposure activation phase of therapy it was associated with reduced symptoms post-treatment and improved rates of recovery. Thus, Hayes et al. (2007b) suggested that emotional processing mediated the association between depression spikes and improved outcomes. They construed emotional processing and associated depression spikes as evidence of *critical fluctuations,* reflecting destabilisation of the depressive system before transition,

consistent with a general principle of change seen across a range of psychological phenomena, and analogous to that seen in exposure therapy for anxiety (Heimberg & Becker, 2002).

Depression spikes have recently been studied in the context of prolonged exposure treatment for post-traumatic stress disorder (Keller et al., 2013). However, Keller et al. (2013) failed to replicate Hayes et al.'s (2007b) finding; depression spikes were not associated with improved depression outcomes. More work is needed to understand the clinical significance of transient symptom spikes in relation to emotional processing and depression outcomes.

The rapid early response has been variably defined (see Lambert, 2005 for review). However, early symptom change in CBT is thought to be associated with "remoralization" that occurs early in therapy (Howard, Moras, Brill, Martinovich, & Lutz, 1996) and reflects an increase in hope resulting from a strengthening of belief that change is possible and that therapy might be helpful in alleviating change (Kuyken, 2004). The rapid response has been cited as evidence to challenge Beck et al.'s (1979) cognitive mediation hypothesis, since cognitive modification strategies are not commonly applied during the early stages of therapy (Ilardi & Craighead, 1994, 1999).

Ilardi and Craighead argue that the rapid early response is consistent with improvement by non-specific processes common to all psychotherapies, such as talking about ones problems with a warm, attentive professional. The rapid response was replicated in Hayes et al. (2007b) study, and clients who experienced a rapid early response expressed greater hope in early narratives compared to those who did not and showed better outcomes at post-treatment. This provides some support for the notion of rapid early response as evidence of remoralisation, consistent with the phase model of psychotherapy. More

recently, early response to treatment has been studied using more advanced statistical methods (e.g. Forand & DeRubeis, 2013; Haas, Hill, Lambert, & Morrell, 2002). Forand and DeRubeis (2013) reported that pre-treatment anxiety predicted early rapid change in depression symptoms in CBT and antidepressant treatments for depression, but that early response did not predict positive outcomes. They suggest that anxiety may influence responsiveness to common therapy factors. However, the mechanisms linking rapid response to longer-term outcome is unclear (Lambert, 2005) and the debate over the precedence of specific versus common factors in therapy continues. Lambert (2005) speaks to the dilemma and points to the importance of examining trajectories of treatment response and their causes to help to clarify active ingredients of therapy.

Thus, preliminary evidence suggests that hope and emotional processing may be associated with discontinuities in symptom change and predict improved client outcomes (Hayes et al., 2007b). However, Hayes et al. studied an exposure-based cognitive therapy intervention expressly developed to target these constructs. It is not clear whether these findings would generalise to the original protocols (Beck et al., 1979) more commonly used in CBT practice and to in-session hope and processing. Adler et al. (2013) recently studied emotional processing in the context of routine clinic psychotherapy and found that higher levels preceded sudden gains in mental health, as did narrative coherence. They concluded that developing new insight and making meaning in therapy is associated with subsequent sudden gains.

The literature presented on the shape of change in CBT for depression demonstrates evolving understanding about the process of change and has highlighted important client processes that may mediate therapeutic change,

specifically hope (Ilardi & Craighead, 1994; Kuyken 2004), emotional processing (Hayes et al., 2007b) and cognitive shifts (Tang & DeRubeis, 1999). However, understanding facets of therapy that predict these changes is still lacking.

Future Directions for Research

Therapy variables. Literature examining discontinuous trajectories of therapeutic change has for the most part, concentrated on client processes during these periods of rapid change. Yet, therapist variables consistently account for a significant proportion of the variance in outcome in CBT (e.g. Okiishi et al., 2006) and there is a body of literature to suggest that therapist competence is associated with improved client outcomes (Trepka, Rees, Shapiro, Hardy, & Barkham, 2004). This suggests that the way in which therapy is provided can influence client outcomes. Furthermore, therapy is inherently a dynamic interaction between therapist and client, hence, research needs to attend to client, therapist and their interaction in order to understand the complexities of the process of therapeutic change (Llewellyn & Hardy, 2001). This appears to be a field deserving of increased attention. A better understanding of the role of therapy factors in periods of transition may help to improve treatments and yield pragmatic implications for clinical decision-making (DeRubeis, Brotman & Gibbons, 2005).

Treatment-resistant depression. There is no consensus definition for treatment-resistance, but typically treatment-resistant depression refers to the persistence of depression despite treatment that might be expected to be effective (Fava, 2003). It is a relatively common occurrence affecting up to 50-60% of people treated with an adequate course of antidepressant medications (Fava, 2003; Trivedi et al., 2006).

Persistence of depression despite treatment has significant adverse consequences for psychological wellbeing and social functioning (Moore & Garland, 2003). Higher levels of demoralisation and hopelessness are observed compared to acute depression (Thase, 1994), and as more treatment steps are required, the likelihood of remission diminishes and relapse rates rise (Rush et al., 2006). In conceptualising persistent depression, Moore and Garland (2003) describe a long-term vicious cycle where successive treatment failures reinforce hopeless beliefs and the persistence of depression (despite intervention) negatively impacts self-esteem. Chronic patterns of cognitive, emotional and behavioural avoidance and social withdrawal are activated and serve to maintain depression; these patterns become more entrenched and disruptive as depression persists. Moore and Garland note that offering cognitive interventions to help clients to address chronic patterns of avoidance in therapy frequently results in transient symptom disturbance prior to therapeutic benefit (p.36), and so non-linear trajectories may be expected in this population.

The process of therapeutic change is under-researched in this population; yet understanding change processes in people who struggle to attain therapeutic change, may help to elucidate factors underlying non-response to treatment and enhance the potency of intervention. As discussed here, hope and emotional processing represent candidates identified in the literature that may help to explain rapid symptom change. The paucity of research in treatment-resistant populations means that hypotheses as to the shape and process of change must be speculative, but given theoretical accounts emphasising the prominence of avoidance and hopeless beliefs in persistent depression, one may expect the clinical significance of emotional processing and remoralisation to be magnified. This is supported by evidence suggesting

that emotional processing is associated with improved outcomes in dialectical behaviour therapy for people with treatment-resistant depression (Feldman, Harley, Kerrigan, Jacobo & Fava, 2009). Therefore, treatment resistant depression presents a promising avenue for research examining discontinuities of change and their concomitant processes in order to understand inhibitors and facilitators of therapeutic change.

Methodological Issues and Challenges

Identification of discontinuities is a growing field and enables focused research of change processes. However, there are limitations to the literature reviewed here. Much of it relies on correlational data, meaning that causality cannot be inferred, small samples and a lack of appropriate controls are also impediments to interpretation. These are often casualties associated with process research that is less well funded than outcome research. Another issue with the study of discontinuities is the inconsistent operationalisation of change patterns and measurement of process, which limits the capacity to compare findings (Llewellyn & Hardy, 2001). Progress to build upon the extant literature can be achieved by concerted programmes of theory-driven research drawing upon sophisticated and diverse range of methodologies.

Laurenceau et al. (2007) identified core aims for process research to study the course of symptom change over time and to identify moderators and mediators of change. Psychotherapeutic change has often been studied using cross-sectional aggregated data at pre- and post-treatment (e.g. Elkin, 1989). However, this rests on the assumption that change is linear and universal and, as discussed, there is mounting evidence that this is not so. Client heterogeneity in response to treatment is masked by such approaches (Cuijpers, van Lier, van Straten & Donker, 2005). This highlights the importance

of longitudinal assessments of outcome, as well as of putative mediating and moderating variables in order to sufficiently measure change over time (Laurenceau et al., 2007). More sophisticated analytic procedures now offer the capacity to distinguish different patterns of symptom change, and test variables that may predict the shape and rate of change (Singer & Willet, 2003).

Kraemer, Wilson, Fairburn and Agras (2002) present a conceptual and analytical framework to facilitate the study of mediators and moderators in psychotherapy research. Mediators are variables that account for the relation between an independent and dependent variable and can point to possible mechanisms through which an intervention might achieve its effects. They should precede symptom change, occur during the course of treatment and be associated with future change. Thus, longitudinal assessment of putative mediators would further analysis of causal mechanisms.

Psychotherapy process-outcome research is concerned with the mechanisms through which client change is achieved and involves the study of factors that may influence therapeutic change, including therapist, client and their interaction (Lambert & Hill, 1994). A considerable challenge facing process researchers is how to appropriately examine this dynamic therapeutic interaction between therapist and client systems (Llewellyn & Hardy, 2001).

Concluding Summary

CBT for depression is an efficacious treatment but there is substantial room for improvement. Empirical understanding of how and why change occurs in CBT for depression is still needed (Kraemer et al., 2002; Kazdin, 2007), yet is integral to efforts to optimise therapeutic change. Exploring individual trajectories of symptom change enables research to move beyond the question

of whether or not CBT is effective to examine *how* change occurs (Barkham, Stiles and Shapiro, 1993).

Discontinuous patterns of change have been identified across the course of CBT for depression and are associated with improved therapy outcomes. Putative client mediating processes have been proposed, but understanding of the therapy correlates is outstanding. Treatment resistant depression represents a costly and debilitating problem. Patterns of therapeutic change are previously unexplored in this population and may offer opportunity to elucidate processes that inhibit and mobilise therapeutic change.

Examining trajectories of change and their mediators and moderators offers a fruitful line of process research. The task is for researchers to respond to methodological challenges to develop understanding of how therapy leads to effective change. Understanding how change occurs has implications for the practice of CBT, for example, supplying the potential to identify clients who may be at risk of treatment failure early on to enable therapists to respond appropriately to enhance response (Lambert, Whipple, Hawkins, Vermeersch, Nielsen, & Smart, 2003).

References

Aderka, I. M., Nickerson, A., Bøe, H. J., & Hofmann, S. G. (2012). Sudden gains during psychological treatments of anxiety and depression: A meta-analysis. *Journal of Consulting and Clinical Psychology*, *80*(1), 93-101.

Adler, J. M., Harmeling, L. H., & Walder-Biesanz, I. (2013). Narrative meaning making is associated with sudden gains in psychotherapy clients' mental health under routine clinical conditions. *Journal of Consulting and Clinical Psychology*, *81*(5), 839-845.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Andrusyna, T. P., Luborsky, L., Pham, T., & Tang, T. Z. (2006). The mechanisms of sudden gains in supportive–expressive therapy for depression. *Psychotherapy Research*, *16*(5), 526-536.

Barefoot, J.C., Helms, M.J., Mark, D.B., Blumenthal, J.A., Califf, R.M., Haney, T.L., ...Williams, R.B. (1996). Depression and long-term mortality risk in patients with coronary artery disease. *American Journal of Cardiology,78*(6), 613–617.

Barkham, M., Stiles, W.B., & Shapiro, D.A. (1993). The shape of change in psychotherapy: Longitudinal assessment of personal problems. Journal of Consulting and Clinical Psychology, 61(4), 667-677.

Beck, A.T., (1967). *Depression: Clinical, experimental and theoretical aspects*. New York, NY: Hoeber.

Beck, A., Rush, A.J., Shaw, B., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Wiley.

Beck A., Steer R.A., & Brown G.K., (1996). *Beck Depression Inventory - Second Edition: Manual*. San Antonio, TX: The Psychological Corporation.

Beck, J. (1995). *Cognitive therapy: Basics and beyond.* New York, NY: Guildford Press.

Bohn, C., Aderka, I. M., Schreiber, F., Stangier, U., & Hofmann, S. G. (2013). Sudden gains in cognitive therapy and interpersonal therapy for social anxiety disorder. *Journal of Consulting and Clinical Psychology*, *81*(1), 177.

Cuijpers, P. & Smit, F. (2002). Excess mortality in depression: A meta-analysis of community studies. *Journal of Affective Disorders, 72,* 227-236.

Cuijpers, P., van Lier, P.A.C., van Straten, A., & Donker, M. (2005). Examining differential effects of psychological treatment of depressive disorder: An application of trajectory analyses. *Journal of Affective Disorders 89,* 137–146.

DeRubeis, R. J., Brotman, M. A., & Gibbons, C. J. (2005). A conceptual and methodological analysis of the nonspecifics argument. *Clinical Psychology: Science and Practice, 12,* 174–183.

DeRubeis, R.J., Gelfand, L.A., Tang, T.Z., & Simons,A.D. (1999). Medications versus cognitive behavior therapy for severely depressed outpatients: Mega-analysis of four randomized comparisons. *American Journal of Psychiatry, 156,* 1007 – 1013.

DeRubeis, R.J., Hollon, S.D., Amsterdam, J.D., Shelton, R.C., Young, P.R., Salomon, R.M., ... & Gallop, R. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62,* 409 - 416.

Dimidjian, S., Hollon, S.D., Dobson, K.S., Schmaling, K.B., Kohlenberg, R.J., Addis, M.E., ... Jacobsen, N.S. (2006). Randomized trial of behavioural activation, cognitive therapy, and antidepressant medication in the acute

treatment of adults with major depression. *Journal of Consulting and Clinical Psychology, 74*(4)*,* 658-670.

Dobson, K.S., Hollon, S.D., Dimidjian, S, Schmaling, K.B., Kohlenberg, R.J., Gallop, R.J. ... Jacobson, N.S. (2008). Randomized trial of behavioral activation, cognitive therapy, and antidepressant medication in the prevention of relapse and recurrence in major depression. *Journal of Consulting and Clinical Psychology, 76*(3), 468-477.

Drymalski, W. M., & Washburn, J. J. (2011). Sudden gains in the treatment of depression in a partial hospitalization program. *Journal of Consulting and Clinical Psychology*, *79*(3), 364.

Fava, M., (2003). Diagnosis and definition of treatment-resistant depression. *Biological Psychiatry, 53,* 649-659.

Feldman, G., Harley, R., Kerrigan, M., Jacobo, M., & Fava, M. (2009). Change in emotional processing during a dialectical behaviour therapy-based skills group for major depressive disorder. *Behaviour Research & Therapy, 47,* 316-321.

Fennell, M.J.V., & Teasdale, J.D. (1987). Cognitive therapy for depression: Individual differences and the process of change. *Cognitive Therapy and Research, 11*(2), 253-271.

Foa, E.B., & Kozak, M.J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99,* 20–35.

Forand, N. R., & DeRubeis, R. J. (2013). Pretreatment anxiety predicts patterns of change in cognitive behavioral therapy and medications for depression. *Journal of Consulting and Clinical Psychology*, *81*(5), 774-782.

Goodridge, D., & Hardy, G. E. (2009). Patterns of change in psychotherapy: An investigation of sudden gains in cognitive therapy using the assimilation model. *Psychotherapy Research*, *19*(1), 114-123.

Haas, E., Hill, R. D., Lambert, M. J., & Morrell, B. (2002). Do early responders to psychotherapy maintain treatment gains? *Journal of Clinical Psychology*, *58*(9), 1157-1172.

Hardy, G. E., Cahill, J., Stiles, W. B., Ispan, C., Macaskill, N., & Barkham, M. (2005). Sudden gains in cognitive therapy for depression: a replication and extension. *Journal of Consulting and Clinical Psychology*, *73*(1), 59-67.

Hayes, A.M., Beevers, C., Feldman, G., Laurenceau, J.-P., & Perlman, C.A. (2005). Avoidance and emotional processing as predictors of symptom change and positive growth in an integrative therapy for depression. *International Journal of Behavioral Medicine, 12,* 111–122.

Hayes, A.M., Laurenceau, J.-P., & Feldman, G.C., Strauss, J.L., & Cardaciotto, L.A. (2007a). Change is not always linear: The study of nonlinear and discontinuous patterns of change in psychotherapy. *Clinical Psychology Review, 27,* 715-723.

Hayes, A.M., Feldman, G.C., Beevers, C.G., Laurenceau, J.-P., Cardaciotto, L., Lewis-Smith, J. (2007b). Discontinuities and cognitive changes in an exposure-based cognitive therapy for depression. *Journal of Consulting and Clinical Psychology 75,* 409–421.

Heimberg, R. G., & Becker, R. E. (2002). *Cognitive-behavioral group treatment for social phobia: Basic mechanisms and clinical applications.* New York, NY: Guilford Press.

Hollon, S.D., DeRubeis, R.J., Shelton, R.C., Amsterdam, J.D., Salomon, R.M., O'Reardon, J.P., ... Gallop, R. (2005). Prevention of relapse following

cognitive therapy vs medications in moderate to severe depression. *Archives of General Psychiatry, 62,* 417-422.

Hollon, S.D., Thase, M.E., & Markowitz, J.C. (2002). Treatment and prevention of depression. *Psychological Science in the Public Interest, 3,* 39–77.

Howard, K.I., Moras, K., Brill, P.L., Martinovich, Z., & Lutz, W. (1996). Evaluation of psychotherapy: Efficacy, effectiveness, and patient progress. *American Psychologist, 51,* 1059–1064.

Hunnicutt-Ferguson, K., Hoxha, D., & Gollan, J. (2012). Exploring sudden gains in behavioral activation therapy for major depressive disorder. *Behaviour Research and Therapy*, *50*(3), 223-230.

Hunot, V.M., Horne, R., Leese, M.N. & Churchill, R.C. (2007). A cohort study of adherence to antidepressants in primary care: The influence of antidepressant aconcerns and treatment preferences. *Primary Care Companion to the Journal of Clinical Psychiatry, 9*(2), 91-99.

Ilardi, S.S., & Craighead, W.E. (1994). The role of nonspecific factors in cognitive behavior therapy for depression. *Clinical Psychology: Science and Practice, 1,* 138–156.

Ilardi, S.S., & Craighead, W.E. (1999). Rapid early response and nonspecific factors in cognitive-behavior therapy for depression: A reply to Tang and DeRubeis. *Clinical Psychology: Science and Practice, 6,*295–299.

Judd, L.L. (1997). The clinical course of unipolar major depressive disorders. *Archives of General Psychiatry, 54*(11), 989-991.

Jun, J. J., Zoellner, L. A., & Feeny, N. C. (2013). Sudden gains in prolonged exposure and sertraline for chronic PTSD. *Depression and anxiety*, *30*(7), 607-613.

Kazdin, A. E. (2005). Treatment outcomes, common factors and continued neglect of mechanisms of change. *Clinical Psychoogy: Science and Practice, 12*(2), 184-188.

Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology, 3,* 1-27.

Keller, S. M., Feeny, N. C., & Zoellner, L. A. (2014). Depression sudden gains and transient depression spikes during treatment for PTSD. *Journal of Consulting and Clinical Psychology*, *82*(1), 102-111.

Kelly, M. A., Cyranowski, J. M., & Frank, E. (2007). Sudden gains in interpersonal psychotherapy for depression. *Behaviour Research and Therapy*, *45*(11), 2563-2572.

Kelly, M.A., Roberts, J. E., & Bottonari, K. A. (2007). Non-treatment-related sudden gains in depression: The role of self-evaluation. *Behaviour Research and Therapy*, *45*(4), 737-747.

Kelly, M.A., Roberts, J.E., & Ciesla, J.A. (2005). Sudden gains in cognitive behavioral treatment for depression: When do they occur and do they matter? *Behaviour Research and Therapy, 43,* 703-714.

Kraemer, H.C., Wilson, T.W., Fairburn, C.G., & Agras, W.S. (2002). Mediators and moderators of treatment effects in randomized controlled trials. *Archives of General Psychiatry, 59,* 877-883.

Kupfer, D.J. (1991). Long-term treatment of depression. *Journal of Clinical Psychiatry, 52*(suppl), 28-34.

Kuyken, W. (2004). Cognitive therapy outcome: The effects of hopelessness in a naturalistic outcome study. *Behaviour Research and Therapy,42,* 631–646.

Lambert, M. J. (2005). Early response in psychotherapy: Further evidence for the importance of common factors rather than “placebo effects”. *Journal of Clinical Psychology*, *61*(7), 855-869.

Lambert, M. J., & Hill, C. E. (1994). Assessing psychotherapy outcomes and processes. In A. E. Bergin & S. L. Garfield (Eds.). *Handbook of psychotherapy and behaviour change* (4th ed., pp. 72–113). New York: Wiley.

Lambert, M.J., Whipple, J.L., Hawkins, E.J., Vermeersch, D.A., Nielsen, S.L., & Smart, D.W. (2003). Is it time for clinicians to routinely track patient outcome? A meta-analysis. *Clinical Psychology: Science and Practice 10*, 288–301.

Laurenceau, J -P., Hayes, A.M., & Feldman, G.C., (2007). Statistical and methodological issues in the study of change in psychotherapy. *Clinical Psychology Review, 27*, 682−695.

Llewelyn, S., & Hardy, G. (2001). Process research in understanding and applying psychological therapies. *British Journal of Clinical Psychology*, *40*(1), 1-21.

Lorenz, T. A., Pulverman, C. S., & Meston, C. M. (2013). Sudden gains during patient-directed expressive writing treatment predicts depression reduction in women with history of childhood sexual abuse: Results from a randomized clinical trial. *Cognitive Therapy and Research*, *37*(4), 690-696.

Mathers, C.D. & Loncar, D. (2005). *Updated projections of global mortality and burden of disease, 2002-2030: Data sources, methods and results (working paper).* Geneva: WHO, 2005.

Medical Research Council (2008). *Developing and evaluating complex interventions: New guidance.* London: Medical Research Council.

Moore, R. G., & Garland, A. (2003). *Cognitive therapy for chronic and persistent depression*. Chichester, UK: Wiley.

National Institute for Health & Clinical Excellence, (2009). *Depression: The treatment and management of depression in adults (updated edition). National Clinical Practice Guideline – 90.* London: NICE. Retrieved from http://guidance.nice.org.uk/CG90/NICEGuidance/pdf/English

Okiishi, J. C., Lambert, M. J., Eggett, D., Nielsen, L., Dayton, D. D., & Vermeersch, D. A. (2006). An analysis of therapist treatment effects: Toward providing feedback to individual therapists on their clients' psychotherapy outcome. *Journal of Clinical Psychology, 62,* 1157-1172.

Rachman, S. (1980). Emotional processing. *Behaviour Research and Therapy,18,* 51–60.

Richards, D. A., & Suckling, R. (2009). Improving access to psychological therapies: Phase IV prospective cohort study. *British Journal of Clinical Psychology*, *48*(4), 377-396.

Riedel-Heller, S.G., Matschinger, H., & Angermeyer, M., (2005). Mental disorders: Who and what might help? Help-seeking and treatment preferences of the lay public. *Social Psychiatry and Psychiatric Epidemiology, 40*(2), 167-174.

Rush, A.J., Beck, A.T., Kovacs, M., & Hollon, S. (1977). Comparative efficacy of cognitive therapy and pharmacotherapy in the treatment of depressed outpatients. *Cognitive Therapy and Research, 1,* 17-37.

Rush, A.J., Madhukaer, H., Trivedit, M.D., Wisniewski, S.R., Nierenberg, A.A., Stewart, J.W., ... Fava, M. (2006). Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: A Star*D report. *American Journal of Psychiatry, 163,* 1905 – 1917.

Segal, Z.V., Williams, J.M.G., & Teasdale, J.D. (2002). *Mindfulness-based cognitive therapy for depression: a new approach to preventing relapse*. New York, NY: Guilford Press.

Singer, J.D., & Willet, J.B. (2003). *Applied longitudinal data analysis: Modelling change and event occurrence.* New York, NY: Oxford University Press

Tang, T.Z., & DeRubeis, R.J. (1999). Sudden gains and critical sessions in cognitive behavioural therapy for depression. *Journal of Consulting and Clinical Psychology, 67,* 894–904.

Tang, T.Z., DeRubeis, R.J., Hollon, S.D., Amsterdam, J., & Shelton, R. (2007). Sudden gains in cognitive therapy of depression and depression relapse/recurrence. *Journal of Consulting and Clinical Psychology, 75*(3), 404-408.

Tang, T. Z., DeRubeis, R. J., Beberman, R., & Pham, T. (2005). Cognitive changes, critical sessions, and sudden gains in cognitive-behavioral therapy for depression. *Journal of Consulting and Clinical Psychology*, *73*(1), 168-172.

Tang, T.Z., Luborsky, L., & Andrusyna, T. (2002). Sudden gains in recovering from depression: Are they also found in psychotherapies other than cognitive-behavioral therapy? *Journal of Consulting and Clinical Psychology, 70,* 444−447.

Teasdale, J.D. (1999). Emotional processing, three modes of mind, and the prevention of relapse in depression. *Behaviour Research and Therapy, 37,* S53–S78.

Thase, M.E. (1994). The roles of psychosocial factors and psychotherapy in refractory depression: missing pieces in the puzzle of treatment resistance In W.A. Nolen, J. Zohar, S.P. Roose & J.D. Amsterdam (Eds.), Refractory

depression: Current strategies and future directions. Chichester, UK: John Wiley & Sons.

Trepka, C., Rees, A., Shapiro, D. A., Hardy, G. E., & Barkham, M. (2004). Therapist competence and outcome of cognitive therapy for depression. *Cognitive Therapy and Research, 28,* 143-157.

Trivedi, M.H., Fava, M., Wisniewski, S.R., Thase, M.E., Quitkin, F.M., Warden, D. … Rush, J. (2006). Medication augmentation after the failure of SSRIs for depression. *New England Journal of Medicine,* 354, 1243-1252.

Vittengl, J.R., Clark, L.A., & Jarrett, R.B. (2005). Validity of sudden gains in acute phase treatment of depression. *Journal of Consulting and Clinical Psychology, 73,* 173–182.

Watkins, E., Scott, J., Wingrove, J., Rimes, K., Bathurst, N., Steiner., H., ... Morialis, Y. (2007). Rumination-focused cognitive behaviour therapy for residual depression: a case series. *Behaviour Research and Therapy*, *45*, 2144–2154.

Wiles, N., Thomas, L., Abel, A., Ridgway, N., Turner, N., Campbell, J., ... & Lewis, G. (2013). Cognitive behavioural therapy as an adjunct to pharmacotherapy for primary care based patients with treatment resistant depression: results of the CoBalT randomised controlled trial. *The Lancet*, *381*(9864), 375-384.

DOCTORATE IN CLINICAL PSYCHOLOGY

Examining the Process of Change in Cognitive Behaviour Therapy for Treatment Resistant Depression

EMPIRICAL PAPER

Supervisors

Professor Willem Kuyken
University of Exeter

Professor William Henley
University of Exeter

Intended Journal: Journal of Consulting and Clinical Psychology

Word Count: Abstract: 217; Empirical paper: 8000 (excluding tables, figures, references and appendices**).**

Abstract

Objective: The present studies aimed to examine temporal patterns of symptom change over the course of cognitive behavioural therapy (CBT) in individuals with treatment-resistant depression (TRD) and evaluate their relationship to outcomes. They further sought to investigate whether case-conceptualisation competence, client hope and processing were associated with therapeutic change.

Method: Participants were 156 individuals with TRD receiving 12-18 sessions of CBT as part of a randomised controlled trial. Depressive severity was assessed at each session. Audio-recordings of therapy sessions proximal to sudden gains and control sessions for 25 sudden gainers and 25 non-sudden gainers were rated for client hope and emotional processing, and therapist competence in case-conceptualisation.

Results: The overall shape of change was best described as cubic, with frequent discontinuities in symptom trajectories. Sudden gains were associated with reduced depressive severity and a greater likelihood of remission at 12 months. Sudden gainers demonstrated greater hope than non-sudden gainers and emotional processing increased prior to a gain. Therapists showed greater competence in case-conceptualisation with sudden gainers.

Conclusion: The present study describes a non-linear shape of change in TRD and extends the phenomenon of sudden gains to this population. It suggests that the combination of hope for change with supported efforts to process and make meaning of experiences may predispose individuals favourably towards experiencing sudden gains in therapy.

Keywords: treatment resistant depression, cognitive therapies, patterns of change, emotional processing, hope

Examining the Process of Change in Cognitive Behaviour Therapy for Treatment-Resistant Depression

Depression is a prevalent, debilitating illness that carries a major personal and public health burden (Mathers & Loncar, 2006). It is widely treated with antidepressant medications, but these have limited effectiveness. Recent evidence suggests that half do not recover with antidepressant treatment (Trivedi et al., 2006), thus treatment resistant depression is commonplace. The CoBalT trial (Wiles et al., 2012) provided evidence that cognitive behaviour therapy (CBT) can be an effective adjunctive treatment in this group. Yet, despite significantly superior rates of relapse and remission compared to usual care (including antidepressants), a significant proportion of people did not respond[1] to CBT (45% at 12 months, Wiles et al., 2012). This is consistent with the substantial body of CBT literature suggesting that CBT is efficacious in relieving depression, but by no means universally effective (e.g. Hollon, Thase & Markowitz, 2002). This study aims to better understand processes that may be instrumental in therapeutic change so that potentially targeting these processes can enhance treatment outcomes.

Kazdin (2007) set out a framework for examining the processes and mechanisms by which CBT produces change in depression. Process-oriented research can complement effectiveness trials to advance understanding of the factors underlying symptom change in order to guide treatment development and aid implementation (Kazdin, 2007; Medical Research Council, 2008). At a clinical practice level, a better understanding of the temporal pattern and processes of therapeutic change could enable therapists to monitor clients' progress and respond to individualise therapy accordingly to optimise change

[1] Treatment response was defined as at least a 50% reduction in symptoms from baseline.

(Whipple, Lambert, Hawkins, Vermeersch, Nielsen, & Smart, 2003). The process of therapeutic change is under-researched in treatment-resistant populations; yet understanding processes of change in people who struggle to attain therapeutic change can be especially illuminating to understand treatment non-response and enhance the potency of intervention (Lambert, 2011). This study uses the Kazdin framework to first describe patterns of change occurring over the course of CBT for treatment-resistant depression delivered as part of the CoBalT trial (Wiles et al., 2012), and second, examine therapy and client factors operating at times of rapid symptom change to potentially explain their relationship to outcome.

Although there is no consensus definition, treatment-resistant depression typically refers to the persistence of depression despite treatment that might be expected to be effective (Fava, 2003). Treatment-resistant depression is characterised by enduring hopelessness, helplessness and low self-esteem. Successive treatment failures and the persistence of depression confirm and entrench this cognitive triad (Moore & Garland, 2003). Chronic patterns of cognitive, emotional and behavioural avoidance are activated and serve to maintain depression; becoming more disruptive as depression persists (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Moore & Garland (2003) outline how CBT can be modified to address the chronic negative triad of treatment resistant depression. They advocate a warm, collaborative therapeutic stance, a focus on conditional beliefs and emphasise the importance of developing a personalised case-conceptualisation and treatment plan.

The shape of therapeutic change has received increased attention in recent years, one strand of research has focused on discontinuous patterns of non-linear change (Hayes, Laurenceau, Feldman, Strauss & Cardaciotto,

2007a). Three patterns have been identified that are associated with improved depression outcomes: “sudden gains” (Tang & DeRubeis, 1999); “depression spikes” (Hayes, Feldman, Beevers, Cardaciotto, Laurenceau & Lewis-Smith (2007b) and “rapid early responses” (Ilardi & Craighead, 1994). These are illustrated in Figure 5.

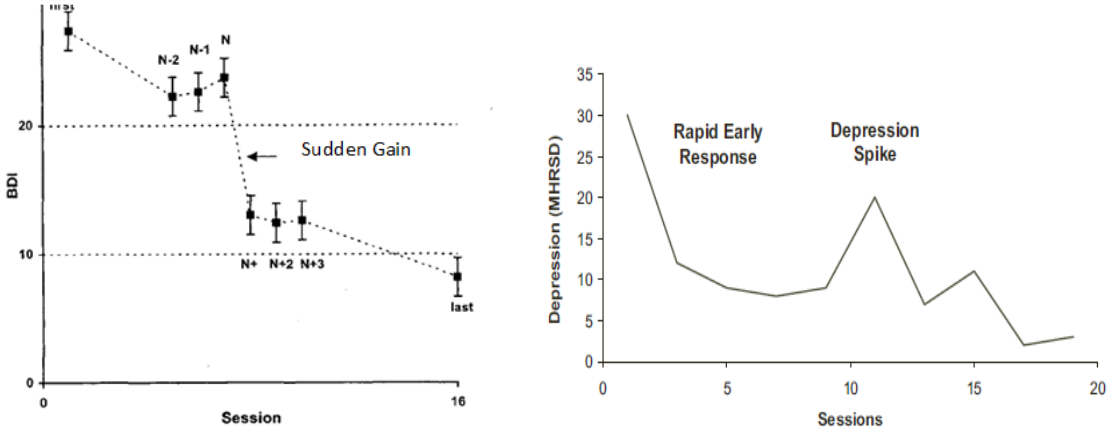


Figure 5: Temporal change in depression symptoms across the course of CBT depicting the sudden gain, depression spike, and rapid early response. Images taken from Tang and DeRubeis (1999, left) and Hayes et al. (2007b, right).

Sudden gains have consistently been associated with improved outcomes across a range of interventions and disorders (Aderka, Nickerson, Bøe & Hofmann, 2012; Adler, Harmeling & Walder-Biesanz, 2013; Bohn, Aderka, Schreiber, Stangier, & Hofmann, 2013; Keller, Feeny & Zoellner, 2014). They are hypothesised to result from cognitive shifts observed in “critical” pre-gain sessions (Tang & DeRubeis, 1999; Tang, DeRubeis, Beberman & Pham, 2005). However, others have failed to replicate this finding (Bohn et al., 2013; Hofmann, Schulz, Meuret, Moscovitch & Suvak, 2006; Kelly, Roberts & Ciesla,

2005) and the observation that sudden gains arise in a range of treatment approaches that are not oriented towards cognitive change (e.g. Vittengl, Clark & Jarrett, 2005) has led to suggestions that a more trans-theoretical perspective may be warranted (Hardy, Cahill, Stiles, Ispan, Macaskill & Barkham, 2005). Cognitive changes remain the principal mechanism studied to date but assimilation (Goodridge & Hardy, 2009), interpretive accuracy (Andrusyna, Luborsky, Pham & Tang, 2006), self-evaluation processes (Kelly, Roberts & Bottonari, 2007) and, narrative meaning making (Adler et al., 2013) have also been suggested as possible contributing processes. Tang & DeRubeis (1999) theorised that sudden gains trigger an “upward spiral”, marked by further cognitive change and improved therapeutic alliance that facilitates onward therapeutic change.

Hayes et al. (2007b) identified “depression spikes” in a trial of exposure-based cognitive therapy. Depression spikes described transient periods of symptom disturbance, and were associated with improved depression at the end of therapy. Hayes et al. (2007b) suggested that the relationship between depression spikes and improved outcomes was mediated by emotional processing. Depression spikes are theorised to reflect activation of the depressive network that serves to facilitate emotional processing and are likened to the principle of destabilization before transition in therapeutic change (Hayes et al., 2007b). However, a recent study in the context of post-traumatic stress disorder found that depression spikes did not influence outcome (Keller, Feeny & Zoellner, 2014).

The rapid early response describes a pattern of responding where the majority of total symptom change occurs during the first few sessions (e.g. Rush, Beck, Kovacs & Hollon, 1977; Fennell & Teasdale, 1987). Ilardi and

Craighead (1994) theorised that the rapid early response to CBT reflects an early increase in hopefulness that is largely mediated by common therapy factors such as the therapeutic alliance. Indeed, greater hopefulness has been observed among rapid responders (Hayes et al., 2007b); however, the debate about the precedence of specific versus common factors in therapeutic change continues (e.g. Gerger, Munder & Barth, 2013).

Research has repeatedly shown that individuals who evince these discontinuities obtain better therapeutic outcomes than those who do not (Aderka, Nickerson, Bøe, & Hofmann, 2012; Adler, Harmeling & Walder-Biesanz, 2013; Hayes et al., 2007b; Ilardi & Craighead, 1994; Keller, Feeny & Zoellner, 2014). Yet, research explaining discontinuities in outcome is limited, and uncertainty remains about facets of therapy that predict these changes.

Discontinuous patterns are thought to correspond to transitional periods in therapy; thereby, affording opportunity to isolate and study variables that may be causally related to change (Hayes, Laurenceau, Feldman, Strauss & Cardaciotto, 2007b; Tang & DeRubeis, 1999). We need to know more about the therapy processes that characterise these important periods and, hence, what therapist and client can do to bring about change.

Cognitive shifts, hope, and emotional processing have been associated with discontinuous patterns of change, with inconclusive results so far. The processes associated with sudden gains have commonly been studied by comparing the pre-gain session to the pre-pre-gain session (e.g. Adler et al., 2013; Bohn et al., 2013; Hofmann et al., 2006; Tang & DeRubeis, 1999; Tang et al., 2005). While this offers valuable insight into the changes preceding sudden gains, it cannot determine how these may differ in non-sudden gainers. This study examines the role of hope and emotional processing in relation to

discontinuities of change in the context of CBT for treatment-resistant depression. Both within and between person-control sessions are included to afford understanding of the temporal changes leading up to gains, as well as how this pattern of change may differ in non-sudden gainers. This study further built on existing literature by integrating examination of a specific therapy factor, namely therapist competence in case-conceptualisation.

Case-conceptualisation is integral to the practice of CBT but until recently has received relatively little attention in research (Bieling & Kuyken, 2003). It is an evolving collaborative process between therapist and client that synthesises theory and practice to generate hypotheses to describe and explain a person's difficulties and help clients make sense of their experiences (Division of Clinical Psychology, 2011; Kuyken, Padesky & Dudley, 2009). Its principal function is to guide therapy in order to relieve distress and build resilience (Kuyken et al., 2009), but it is also proposed to provide validation and normalisation, to foster engagement and to aid understanding of non-response in therapy, offering alternative routes for change (Kuyken et al., 2009). Following recent suggestions of a role for processing and meaning making in therapeutic change (Adler et al., 2013; Hayes et al., 2007b) this study asked whether therapists can facilitate processing through competent case-conceptualisation. It was hypothesised that more competent case-conceptualisation should assist clients to process and make meaning of their experience. Further, this study asked whether more competent case-conceptualisation was associated with clients' hope for change, and whether it may ultimately improve outcomes.

This paper is divided into two studies. The first aimed to examine and describe the temporal pattern of symptom change observed across the course of CBT in people with treatment-resistant depression using individual growth

curve models. It evaluates the incidence of discontinuous patterns of change and their relationship to depression outcomes. Moore & Garland (2003) caution that due to the prominence of avoidance in treatment resistant depression, initial cognitive interventions frequently result in transient symptom disturbance prior to therapeutic benefit (p.36). This is consistent with Hayes et al.'s (2007) conceptualisation of depression spikes. Therefore, this study might predict a non-linear course of therapeutic change in this population as the chronic patterns of cognitive, behavioural and emotional avoidance are worked upon.

The second study is a process analysis; therapeutic phenomena in "critical" therapy sessions are explored and compared to control sessions to investigate client and therapist processes that may be influential in the experience of change in therapy. The research questions are articulated below.

Study One.

- What is the shape of change across the course of CBT for depression in this treatment-resistant sample?
- Are sudden gains, rapid early responses, depression spikes observed in people with treatment resistant depression participating in CBT?
- If present, do they predict outcome; do clients who demonstrate discontinuities of change reliably attain better depression outcomes than those who do not?

Study Two.

- What is the relationship between discontinuous patterns of change, therapist competence in case-conceptualisation, and client hope and processing? Specifically, do sessions proximal to discontinuities of change (e.g., sudden gains, rapid early responses and depression

spikes) exhibit changes in case-conceptualisation competence, hope and processing compared to within and between-person control sessions?

Study One: Method

Data source: The CoBalT Study

This project reports a secondary analysis of data collected as part of the CoBalT study (Wiles et al., 2012). CoBalT was a multi-centre[2] pragmatic randomised controlled trial, with the objective to examine the clinical and cost-effectiveness of CBT as an adjunct to pharmacotherapy for people with treatment-resistant depression in primary care. Thus, 469 eligible and consenting participants were randomised to continue with usual GP care, including antidepressants, or to receive a course of CBT in addition to usual care, including antidepressants. Participants were followed up at 3, 6, 9 and 12 month intervals. Thomas et al. (2012) report the protocol in full, Wiles et al. (2012), report the main effectiveness findings, and Hollinghurst et al. (2014), the cost-effectiveness findings.

Ethical Considerations

The CoBalT trial was ethically approved by a multi-centre research ethics committee (NRES/07/H1208/60) and local research governance. The Cobalt Trial Steering Committee and Trial Management Group reviewed and sanctioned the proposed secondary analyses and additional approval was granted by The University of Exeter ethics committee (see Appendices B – E for documentation). The present study utilised the CoBalT dataset in accordance with appropriate consents and ethical approvals and did not involve direct contact with participants. Therefore, no additional risk or burden of participation was incurred.

[2] Universities of Bristol, Exeter, Glasgow and Peninsula Medical School.

Participants

Data from participants who were randomised to receive CBT in addition to usual GP care (n=235), and who had consented to the use of their data in future research (n=210, 89%) were available for inclusion in this project. Participants were adults with treatment resistant depression who had been taking an adequate dose of antidepressant medication for at least six weeks and were still reporting significant depressive symptoms. The CoBalT study eligibility criteria are shown in Table 1.

Table 1

CoBalT Trial Eligibility Criteria

Inclusion criteria	Exclusion criteria
Adults aged 18-75	Bipolar disorder or psychosis
Currently taking adequate dose[1] of antidepressant medication for at least 6 weeks.	Alcohol or substance abuse / dependence
Adhered to their medication[2]	Concurrent psychotherapy or secondary care; or received >5 sessions of CBT in last 3 years
Report clinical level of depressive symptoms[3]	Women who were pregnant at the time of recruitment
Meet criteria for ICD-10 diagnosis of depression [4]	Not able to complete study questionnaires

Note.

1. Based on the British National Formulary
2. Assessed by self-reported measure (Morisky, Green & Levine, 1986).
3. Assessed by self-reported measure of depression severity (Beck Depression Inventory-II, Beck, Steer & Brown, 1996).
4. Assessed using the Revised Clinical Interview Schedule (CIS-R, Lewis, Pelosi, Araya & Dunn, 1992).

Given that this study aims to describe trajectories of change over CBT using growth curve models and to distinguish discontinuities in change, the sample was restricted to participants who had received an adequate dose of CBT to enable this aim. Those who had attended at least nine sessions of CBT and who had completed the BDI-II in at least six sessions were included, yielding a sample of 156 individuals for analysis (75%).

Baseline characteristics. Of these 156 individuals, 73% were women and 99% were white. The mean age was 49.6 years (SD=11.6). Just over half (53%) were married or living as married and most (54%) were in paid employment. Participants reported severe, chronic and treatment-resistant experiences of depression. The mean BDI-II at baseline was 31.96 (SD=9.93), which falls within the severe range. The majority (90%) had experienced depression previously, with more than half (53%) reporting five or more previous episodes. Most (70%) had been taking their current course of antidepressants for more than a year. Comorbidity was almost universal; all but one individual obtained a secondary psychiatric diagnosis (according to the revised Clinical Interview Schedule, Lewis et al., 1992), the most frequent of which was generalised anxiety disorder (51%). These sample characteristics were consistent with the full CoBalT intervention group; the only variation is that this sample contained a slightly higher proportion of people in paid employment (54% compared to 47%).

Therapy and Therapists

Participants were offered 12 to 18 sessions of individual face-to-face CBT. The median number of CBT sessions in this sample was 15 (Range=9-19). CBT sessions lasted approximately 50 minutes and were audio-recorded, subject to written client consent.

Eleven (10 female), UK trained, therapists delivered the CBT across three sites: Exeter, Bristol and Glasgow. Therapy was delivered according to seminal treatment manuals (Beck et al., 1979; Beck, 1995), with adaptations to address treatment resistance in order to explicitly target cognitive and behavioural avoidance (Moore & Garland, 2003). Consistent with Moore and Garland, emphasis was placed on using individualised case-conceptualisations to guide CBT.

Measures

The Beck Depression Inventory, second edition (BDI-II, Beck et al., 1996) measured self-reported depression symptoms at the start of each therapy session and also at baseline, six and 12month follow-ups. Twenty-one items assess symptom severity over a two-week period; scores range from zero to 63 with higher scores indicating more severe depression. It has strong psychometric properties, having been shown to be reliable, valid, and sensitive to change (Beck et al., 1996).

Procedure

Identifying discontinuities of change. Individual treatment trajectories were examined to identify discontinuous patterns of symptom change according to criteria documented in previous research. Dummy variables were generated to indicate the presence of sudden gains, rapid early responses and depression spikes for each session and participants were classified according to whether or not they exhibited each change pattern during therapy.

Sudden gains. Sudden gain criteria should pragmatically distinguish clinically significant gains from transient noise or random symptom variability. Sudden gains were originally identified by Tang and DeRubeis (1999) according to the following criteria requiring: a) at least a 7-point drop in BDI-II from one

session to the next, b) the magnitude of the gain must equal at least 25% of the pre-gain BDI-II and c) the mean BDI-II of the three sessions preceding the gain must be significantly greater than that of the three sessions following the gain[3]. These criteria have been repeatedly used, and have identified sudden gains of clinical significance in terms of their relationship to outcomes (e.g. Keller et al., 2013; Tang & DeRubeis, 1999; Tang, DeRubeis, Hollon, Amsterdam, & Shelton, 2007). However, some have argued the seven point criterion is arbitrary, and other variations have been suggested, for example to include first-session gains (Gaynor, Weersing, Kolko, Birmaher, Heo, & Brent, 2003). Aderka et al.'s (2012) meta-analysis of sudden gains reported that adjusting the criteria and including first-session gains did not significantly alter effect sizes. Furthermore, the reliable change index (Jacobson & Truax, 1991) for this sample equated to 7.07 BDI-II points and so the seven point cut-off appears justified. Therefore, the original Tang and DeRubeis (1999) criteria were retained.

Depression spikes. Hayes et al.'s (2007) criteria were adapted to categorise depression spikes. Spikes were identified by an increase of seven or more BDI-II-points, followed by a decrease of at least seven points within a six session period. This adaption was intended to capture transient symptom spikes whenever they occurred during therapy.

Rapid early responses. There is a lack of consensus in how to measure rapid early responses (Lambert, 2005). Rapid early responses were operationalised by patterns of early change that were large in absolute magnitude and relative to total change during therapy. This method is concordant with recent literature (Hayes et al., 2007b; Renaud, Brent, Baugher,

[3] The differences between the two means exceed $t(4) \geq 2.78$ at $p < .05$.

Birmaher, Kolko & Bridge, 1998) and analogous to the sudden gains critieria. Rapid early responses were demarcated where a) at least 60% of the total BDI-II change during therapy occurred within the first five sessions (Hayes et al., 2007a) and b) the threshold for reliable change was met.

Data analytic strategy. In order to examine trajectories of change over time in therapy it is necessary to consider the longitudinal nature of the data, which entails a multi-level structure. The first level comprised repeated measures of depressive severity collected at each CBT session (BDI-II). These (level 1) observations were nested within individuals (level 2), nested within therapists (level 3). This hierarchically structured data is suited to growth curve modelling approaches (Singer & Willett, 2003). Such multilevel models are robust to differences in the number of observations between individuals. Both within-person and between-person variance in outcome is considered and change trajectories can be examined. This analytic approach allows examination of how individuals change over time and how these changes vary across individuals.

A series of growth curve models were conducted to estimate change in depression over the course of CBT, where session number was used to represent time. To reduce correlation between linear, quadratic and cubic terms session number was centred on the mean session number (8.28). Therefore, the intercept represents the estimated BDI-II score at the average session mid-therapy. Maximum likelihood estimation procedures were used with a flexible unstructured covariance matrix to allow intercepts and slopes to covary and to be estimated from the data, rather than independence assumed.

Firstly, linear change in BDI-II scores over sessions of CBT was modelled. Visual examination of the data depicted differing trajectories for individuals.

Therefore, random intercepts, then random slopes were tested to allow individual rates of change to vary. Next, polynomial growth parameters were tested following observation of curvilinear trends in trajectories. Finally, therapist was tested as a third level to the unadjusted model, to evaluate the change in depressive severity that may be explained by therapist level factors. Likelihood ratio tests were used to compare models and determine which model provided the best fit to the data.

Analysis of covariance (ANCOVA) examined differences between participants with and without sudden gains, depression spikes and rapid early responses in depressive severity at 12 months, controlling for pre-treatment depression at baseline. To provide an additional, clinically significant, measure of outcome, rates of clinical remission[4] at 12 months were evaluated among the different groups using chi square analyses.

Results

Data analysis was implemented using Stata statistical software, version 12.[5]

Growth Curves

Table 2 displays the coefficients, standard errors, p-values and goodness-of-fit statistics from the unadjusted growth curve models used to evaluate the shape of change in depression over sessions of CBT. These analyses revealed a significant linear decrease in depression over the course of CBT in this treatment-resistant sample. Allowing the slopes to vary between individuals improved the fit over the random intercept model.

[4] Clinical remission of symptoms is indicated by a BDI-II score 13 or less (Beck et al, 1996).
[5] Only 3% of data was missing across all assessments, no imputation procedures were undertaken (see Appendix J for details).

Curvilinear patterns were evident in individual trajectories. Therefore, quadratic and cubic parameters were added to the linear model. These revealed a significant cubic pattern of change in addition to the linear decrease in symptoms. Likelihood ratio tests indicated that the cubic model provided the best fit to the data, indicating an overall cubic pattern of change in depression over the course of CBT.

To evaluate whether individual therapists yielded differential client responses to CBT, therapist was added as a third level of variance into the unadjusted cubic model. The three-level model where sessions (level one) were nested within individuals (level two), nested within therapists (level three) did not significantly improve the model fit over the two-level model (see Table 2). Thus, there was no evidence to suggest that client responses to CBT varied systematically by therapist. Partitioning the variance confirmed that the vast majority of variation in depressive severity over the course of CBT was explained at the individual level, only 1% of the variance in depression was explained at the level of the therapist. As the three-level model did not add value to the two-level model, for parsimony, the two-level model was preferred.

Table 2

Fixed Effects and Variance Components for Unadjusted Growth Models: BDI-II by Session

	Parameter	Model A Linear change, fixed slope		Model B Linear change, random slopes		Model C Quadratic change, random slopes		Model D Cubic change, random slopes		Model F Three level cubic model	
Fixed effects	Intercept (SE)	22.79***	(0.88)	22.46***	(0.91)	22.18***	(0.98)	22.12***	(0.98)	22.33***	(1.08)
	Linear term (SE)	-0.99***	(0.03)	-1.10***	(0.07)	-1.06***	(0.07)	-0.93***	(0.10)	-0.93***	(0.10)
	Quadratic term (SE)					0.02	(0.01)	0.02*	(0.01)	0.02*	(0.01)
	Cubic term (SE)							-0.003*	(0.001)	-0.003*	(0.001)
Variance components											
Level 1	Within-person (SE)	39.15	1.2	27.62	0.89	22.88	0.76	21.34	0.73	21.34	0.73
Level 2	Between-person (SE)	117.5	-13.63	125.83	14.53	146.18	16.94	147.16	17.03	144.96	16.99
	Linear term (SE)			0.63	0.089	0.55	0.08	1.04	0.17	1.04	0.17
	Quadratic term (SE)					0.01	0.002	0.01	0.002	0.01	0.002
	Cubic term (SE)							0.0001	0.00004	0.0001	0.00004
Level 3	Therapist (SE)									1.95	2.97
Goodness of fit											
2*log-likelihood (df)				454.54*** (2)		218.97*** (4)		63.45*** (5)		0.71 (1)	

Note.
Quadratic term is equal to the centered session number, squared. Cubic term is equal to the centered session number, cubed.
BDI-II = Beck Depression Inventory, 2nd edition (Beck et al., 1996).
***p<.001 **p<.01 *p<.05

Therefore, the overall shape of change in depression over the course of CBT was best described by the two-level, cubic random intercept and slope model. The average treatment trajectory predicted by this model is illustrated in Figure 6. It suggests that depression severity tended to reduce in early sessions, followed by a period of slowed change, then symptom improvement accelerated towards the latter part of therapy. Despite the significance of the cubic parameter, the average trajectory appears not dissimilar to a linear trend. However, inspecting individual trajectories revealed a high degree of variation between individuals (see Appendix J). As a result of this inter-individual variation, the average treatment trajectory provides a limited conceptualisation of change.

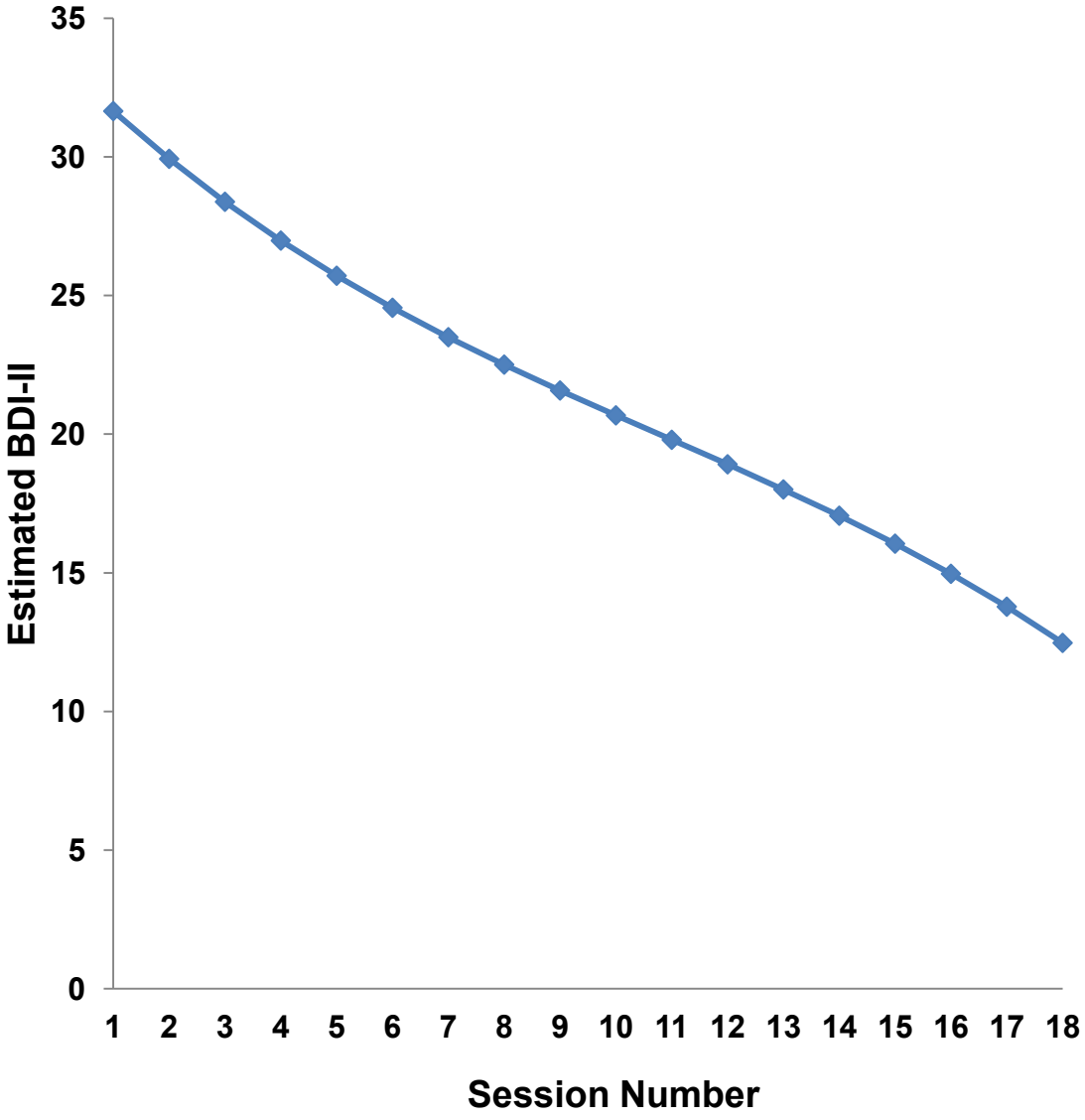


Figure 6. Estimated average trajectory of symptom change (measured by the BDI-II) over sessions of CBT according to the unadjusted two-level cubic model.

Examining model fit graphically by individual suggested that the model appeared to adequately estimate the trajectory of change for many people. However, it appeared unable to capture the large and sharp discontinuities in symptom change that were observed, which may represent incidences of depression spikes and sudden gains. Attention now turns to these patterns.

Discontinuities of Change

In all, 119 sudden gains were observed among 84 individuals, thus 54% experienced a sudden gain at some point during therapy. Of these, 31 went on to experience a second gain, and four displayed a third. The median pre-gain session was six, while the mean magnitude equalled 12.29 BDI-II points (SD=5.53, Range= 7-36). Among sudden gainers, this equated to 62% of their mean symptom change during therapy, and exceeded the mean change of non-sudden gainers during therapy.

Seventy-eight people (50%) demonstrated at least one depression spike during therapy. Forty-six (30%) had one spike, 26 (17%) had two and six (4%) had three spikes. The median session for spikes to occur was session nine, and the mean magnitude of the increase was 11.98 BDI-II points (SD=5.2, Range = 7-31).

Thirty-one people (21%) experienced a rapid early response to therapy. However, of these early improvements 19% were not maintained; six individuals reported a higher BDI-II score at the end of therapy than at session five.

Relationship between discontinuous patterns and depression outcomes. Table 3 shows the mean BDI-II scores at baseline and 12-month follow-ups, mean symptom change during therapy and rates of remission at 12 months, according to participants' classification regarding discontinuous patterns.

Table 3

Mean Depression Outcomes by Participant Classification According to Discontinuous Patterns of Change

Participant classification	n	Total BDI-II change during therapy	Baseline BDI-II	12 month BDI-II	Percent achieving remission at 12 months
Rapid early responders	31	18.81 (10.86)	30.06 (8.82)	15.77(15.16)	38%
Non-rapid early responders	120	15.76 (11.67)	32.41 (10.20)	16.48 (13.66)	40%
Sudden gainers	84	20.51 (11.34)	32.16 (8.91)	12.59 (11.50)	49%*
Non-sudden gainers	72	11.41 (9.72)	31.36 (11.03)	20.08 (15.13)	30%
Depression spikes	78	16.27 (12.47)	32.32 (9.35)	15.64 (13.09)	41%
No depression spikes	78	16.55 (10.57)	31.26 (10.52)	16.58 (14.55)	40%

Note.

BDI-II = Beck Depression Inventory, 2nd Edition (Beck et al., 1996).
Remission of depression is indicated by a BDI-II score of 13 or less (Beck et al., 1996).
Standard deviations are in parentheses.
* $\chi^2(1)=6.30$, $p<.05$

ANCOVA tested the hypothesis that individuals who experienced discontinuous patterns of change would obtain better depression outcomes, after controlling for pre-treatment depression. The results demonstrated a significant main effect of sudden gains: people who experienced sudden gains reported lower levels of depression at 12 months ($F(1,150) = 20.98$, $p < .001$) compared to non-sudden gainers. This represents a medium effect size (Cohen's d) of 0.57. Chi square analyses indicated that more sudden gainers achieved remission at 12 months than non-sudden gainers ($\chi^2(1) = 5.98$, $p = .01$).

Conversely, people with and without depression spikes did not differ in depression at 12 months ($F(1,150) = 0.64$, $p = .43$), and similarly, there was no difference between rapid and non-rapid responders ($F(1,145) = 0.08$, $p = .77$). Chi square analyses showed no significant differences between people with and without depression spikes in the rates of remission at 12 month follow-up ($\chi^2(1) = 0.03$, $p = .87$) nor between rapid and non-rapid responders ($\chi^2(1) = 0.08$, $p = .77$).

Study Two: Processes of Change

Discontinuities in symptom trajectories are proposed to mark transition points in therapy (e.g. Tang & DeRubeis, 1999; Hayes, Laurenceau, Feldman, Strauss & Cardaciotto, 2007b), and so indicate periods of therapy most likely to reveal factors that mobilize and inhibit change (Hayes et al., 2007b). Studying these periods of transition can help to better understand change processes. Study two built on study one by investigating processes of change in therapy from audio-recordings of complete therapy sessions that were proximal to discontinuous patterns associated with outcome. Study one suggested that sudden gains, but not rapid early responses or depression spikes, were significantly associated with improved depression outcomes. Therefore, study

two focused on sudden gains as a meaningful indicator of transition. It sought to understand what characterises these transition points, in terms of therapy processes, in order to shed light on what may explain therapeutic change. The sampling strategy was thus designed to enable examination of the “critical” sessions, proximal to observed sudden gains, and to provide both between and within-person controls for comparison.

Method

Sampling procedures. The sample of therapy sessions for study two were drawn from the 97% of participants who had provided written consent to the use of their therapy audio-recordings for research purposes.

Twenty-five sudden gainers were randomly selected for inclusion in study two. Next, a yoked control group consisting of 25 non-sudden gainers, matched to the sudden gain group by baseline BDI-II score, were selected for inclusion.

The second therapy session was sampled from these 50 participants to provide a consistent baseline measure early in therapy, prior to the experience of discontinuous change patterns. In addition, the sessions immediately preceding, and following, sudden gains were sampled from the 25 sudden gainers. The corresponding pre-gain session was sampled from the 25 non-sudden gainers, matched to the paired sudden gainer.

This strategy yielded a total of 125 therapy sessions for analysis from 50 people and is summarised in Table 4 below.

Table 4

Summary of the Selection of Therapy Sessions for Process Analysis

Group	Sessions sampled (n)		
Sudden gainers (n=25)	Session 2 (25)[1]	Pre-gain sudden gain (25)	Post-gain session (25)
Yoked-control non-sudden gainers (n=25)	Session 2 (25)[2]	Matched "pre-gain" session (25)[2]	

Note.

1. Within-person control sessions
2. Between-person control sessions

Coding of therapy sessions. The Change and Growth Experiences Scale (CHANGE, Hayes, Feldman & Goldfried, 2006) was used to rate the level of in-session emotional processing and hope from audio-recordings of sampled therapy sessions (see Appendix H). Emotional processing refers to the extent to which a person explores, questions and makes meaning of experiences related to their depression (Hayes et al., 2006). Hope describes the extent to which a person expresses a belief that the future will be better and progress can be made, as well as a commitment to change (Hayes et al., 2007). CHANGE is an observational coding system designed to measure the frequency and extent of change processes in psychotherapy and codes variables on a 4-point likert scale from 0=not present or very low to 3=high. Preliminary research indicates good inter-rater agreement and predictive validity (Hayes et al., 2006). CHANGE was chosen for its capacity to capture a *cognitive-affective* form of processing, to study multiple variables pertinent to treatment-resistant depression (hope and processing), and to enable comparison to previous research on discontinuities (Adler et al., 2013; Hayes et al., 2007b). Three

(clinical psychology post-graduates) coders rated sessions for hope and processing using the CHANGE. Each session was rated by two coders and consensus scores were used.

Case-conceptualisation competence was evaluated using the Collaborative Case-Conceptualization Rating Scale (CCCRS - Padesky, Kuyken & Dudley, 2010, see Appendix I). The CCCRS provides an operational definition and observational coding system to evaluate the concept of case-conceptualisation as outlined by Kuyken et al. (2009). The CCCRS is a 14-item observer-rated scale that assesses the presence and degree of specific case-conceptualisation activities on a four point likert scale from 0=incompetent to 3=expert. Consistent with the Kuyken et al. model (2009) it comprises three domains of competence: evolving levels of conceptualisation, collaborative empiricism and strengths/resilience. Preliminary research has demonstrated high levels of inter-rater reliability, internal consistency and good convergent validity with the Cognitive Therapy Scale–Revised (CTS-R; Blackburn et al., 2001), a validated measure of general CBT competence (Kuyken et al., submitted). Two coders independently rated sessions for competence in case-conceptualisation using the CCCRS. One (the author), was a doctoral level clinical psychology student, the other a post-graduate clinical psychology student.

Coders were trained in using the rating tools by authors of the scales (CHANGE - Adele Hayes; CCCRS – Willem Kuyken). Training included instruction, discussion and practise of pre-rated training sessions. Practise continued until inter-rater reliability (ICC ≥ .8) was achieved. Regular supervision meetings were held between the coders and scale authors to

review discrepancies and prevent rater drift. All coders were blinded to outcome and presence or absence of target change patterns.

Data Analytic Strategy. ANOVA evaluated change in process variables in relation to sudden gains by comparing sessions proximal to sudden gains to between and within-person control sessions. Relationships between case-conceptualisation, client hope and processing, and depression outcome at 12 months were analysed using a series of multiple linear regressions and a correlation matrix. Growth curve models in study one provided no evidence that nesting clients within therapists improved the estimation of client depression and therefore, for parsimony, ordinary linear regression was used to predict depression at 12 months, rather than multi-level models. Further, each therapy session is unique in terms of case-conceptualisation, the same therapists may vary in competence across clients and sessions. Thus, conceptually, ordinary linear regression is indicated.

Results

Table 5 below shows descriptive statistics for client hope and emotional processing and therapist competence in case-conceptualisation.

Table 5

Means and Standard Deviations for Client Hope and Processing and Therapist Competence in Case-conceptualisation at the Different Time Points in Therapy Among Sudden Gainers and Non-Sudden Gainers

Variable	Non sudden gainers (n=24†)		Sudden gainers (n=25)		
	Session two	Matched "pre-gain" session	Session two	Pre-gain session	Post-gain session
Positive hope (SD)	1.13 (0.47)	1.15 (0.83)	1.43 (0.70)	1.62 (0.89)	2.04 (0.75)
Emotional processing (SD)	1.04 (0.75)	1.42 (0.80)	1.24 (0.82)	1.74 (0.82)	2.24 (0.75)
CCCRS Total (SD)	18.13 (7.47)	17.71 (5.68)	21.92 (7.14)	21.64 (7.02)	23.40 (6.95)
CCCRS Levels subscale (SD)	6.09 (2.71)	5.67 (2.24)	7.58 (2.62)	7.00 (2.83)	7.96 (2.75)
CCCRS Collaboration (SD)	4.43 (2.00)	4.29 (1.63)	5.50 (1.74)	5.44 (1.61)	5.64 (1.50)
CCCRS Empiricism (SD)	4.30 (1.87)	4.21 (1.25)	5.17 (1.90)	5.32 (2.21)	5.36 (1.85)
CCCRS Strengths (SD)	3.30 (2.22)	3.54 (2.40)	3.67 (2.18)	3.88 (2.42)	4.44 (2.77)

Note.
† Data from one participant was not usable due to failure of session audio-recordings.
Standard deviations are in parentheses.
CCCRS = Competence in Case-Conceptualisation Rating Scale (Padesky, Kuyken & Dudley, 2011).

Factors associated with sudden gains. Two-way mixed ANOVAs evaluated the hypothesis that pre-gain sessions would show greater levels of case-conceptualisation competence, hope and processing compared to between and within-person control sessions. Sudden gain status (present/not) was the between-group factor and time-point (session two/pre-gain) the repeated measure.

ANOVA indicated no significant effect of time-point on the competence of case-conceptualisation ($F(1,45)= 0.06$, $p=.81$), but a significant main effect of sudden gain status ($F(1,47)= 5.51$, $p=.02$). Therapists exhibited greater competence in case-conceptualisation with people who experienced a sudden gain, and this did not vary significantly between session two and pre-gain. Examining Table 5, it appears that for sudden gainers, levels of case-conceptualisation competence at session two and pre-gain were in the competent range and in non-sudden gainers they were in the novice/beginner range. There was no significant interaction between sudden gain status and time-point ($F(1,45)= 0.01$, $p=.92$), suggesting no differential effect from session two to pre-gain between sudden gainers and non-sudden gainers. Sudden gainers expressed significantly greater hopefulness ($F(1,47)= 6.14$, $p=.02$), but this did not differ significantly between session two and pre-gain ($F(1,47)=0.54$, $p=.47$), and again the interaction was not significant ($F(1,47)=0.34$, $p=.56$). Conversely, emotional processing increased significantly from session two to pre-gain ($F(1,47)=9.25$, $p=.004$), but did not differ significantly between sudden gain groups ($F(1,47)=2.17$, $p=.15$), and again the interaction between the factors was not significant ($F(1,48)=0.19$, $p=.67$).

Repeated measures ANOVA examined the effect of time-point (session two / pre-gain / post-gain) within sudden gainers, to evaluate changes in hope,

processing and case-conceptualisation competence in relation to sudden gains. Results indicated that competence of case-conceptualisation remained relatively stable over these time points ($F(2,47)= 1.06$, $p=.36$). However, emotional processing ($F(2,48)= 12.95$, $p<.001$), and hope ($F(2,48)=4.97$, $p=.01$) increased significantly over the sessions. Post-hoc pairwise comparisons of means, applying Bonferroni's correction for multiple tests, suggested that it was only the contrast in processing from session two to post-gain that was significant ($t=4.44$, $p<.001$), and not from session two to pre-gain ($p=.09$), nor from pre to post gain ($p=.09$). The same pattern was observed with hope, it was only the difference between session two and post-gain that was significant ($t=2.74$, $p=.02$). However, it is noteworthy that the mean increase in hope observed during the single sudden gain interval is more than double that observed in the period from session two to pre-gain, a period that is equal to a median of four sessions (range 1-13).

Relationships between outcome and case-conceptualisation, hope and processing. Pearson correlation matrices between the predictor (case-conceptualisation competence, client hope, emotional processing) and outcome variables were generated at each time-point (session two, pre-gain and post-gain) to observe the inter-relationships among the variables measured at the different points in therapy. The inter-correlations between the variables as rated at the *pre-gain session* are shown in Table 6.

Table 6

Zero-order Correlations Showing Inter-relationships Between Hope, Processing and Case-conceptualisation Competence as Measured at Pre-gain, and Depression Severity at Pre-treatment Baseline and 12 months *(n=49)*

	1	2	3	4	5	6	7	8	9
1. Hope	-								
2. Emotional processing	0.59***	-							
3. CCCRS Total scale	0.22	0.37**	-						
4. CCCRS Levels subscale	0.24	0.38**	0.89***	-					
5. CCCRS Collaboration subscale	0.27	0.31*	0.75***	0.62***	-				
6. CCCRS Empiricism subscale	0.14	0.24	0.88***	0.84***	0.65***	-			
7. CCCRS Strengths subscale	0.06	0.21	0.59***	0.27	0.18	0.27	-		
8. Baseline depression (BDI-II)	-0.10	-0.10	-0.07	-0.14	-0.16	-0.08	0.16	-	
9. Depression at 12 months (BDI-II)	-0.50***	-0.49***	-0.33*	-0.36*	-0.26	-0.33*	-0.07	0.49***	-

Note.
CCCRS = Competence in Case Conceptualisation Rating Scale (Padeksy, Kuyken & Dudley, 2011).
BDI-II = Beck Depression Inventory – 2nd Edition (Beck et al., 1996).
*p<.05, **p<.01, ***p<.001

Table 6 points to significant, small to medium, positive relationships between outcome and competence in case-conceptualisation, overall, and with the levels and empiricism subscales specifically. More competent case-conceptualisation on these domains at the pre-gain session was associated with improved depression outcome at 12 months. The absence of a relationship with pre-treatment depression suggests that therapist competence in case-conceptualisation was not influenced by client's severity of depression at intake. Greater expressions of hope and more engagement in emotional processing at the pre-gain session were associated with better outcomes at 12 months, but not with pre-treatment depression.

Greater overall competence in case-conceptualisation was also significantly correlated with emotional processing: more competent conceptualisation was associated with greater client processing. Further, there was a significant positive relationship between client hope and processing.

The significant relationships with outcome reported above were unique to the pre-sudden gain session; i.e., they were not present when the predictor variables were estimated at the second therapy session or at post-gain (see Appendix J). Significant correlations observed at session two were positive associations between emotional processing and 1) therapist competence in conceptualisation (total scale, levels, empiricism and collaboration subscales), and 2) client hope. When the post-gain sessions were rated, only the relationship between hope and processing was significant.

Predicting depression outcome. Multiple linear regression was used to develop an exploratory model to predict depression outcome (BDI-II) at 12 months from therapist competence in case-conceptualisation and client hope and processing, after controlling for pre-treatment depression (baseline BDI-II).

In light of the positive correlations with outcome, the estimates of hope, processing and conceptualisation as measured at the *pre-gain* session were used in the regression analysis.

A sequential multiple regression analysis was employed where pre-treatment depression at baseline was entered into the model on the first step as a predictor of post-treatment depression at 12 months. Based on previous literature documenting the relationship of client hope and processing to predicting outcome (Hayes et al., 2007) these variables were entered simultaneously into the model on the second step. Given that this is the first empirical study using the CCCRS to predict depression outcome, the total scale and subscale variables representing domains of therapist competence in case-conceptualisation were entered at the third and final step of the regression equation in a stepwise manner to reflect the exploratory nature of this question. Table 7 shows descriptive statistics and regression coefficients for the resulting multiple regression model.

Table 7

Hierarchical Regression Table Showing Unstandardised Coefficients (B), Standard Errors (SE) and Standardised Coefficients (β) for the Three Steps of the Multiple Regression Model

	Step 1			Step 2			Step 3		
Variables	B	SE of B	β	B	SE of B	β	B	SE of B	β
Baseline depression (BDI-II)	0.67***	0.17	0.49	0.59***	0.15	0.43	0.57***	0.14	0.42
Hope				-4.35*	2.03	-0.28	-4.39*	1.98	-0.29
Emotional processing				-4.69*	2.20	-0.28	-3.88	2.18	-0.23
CCCRS – Empiricism subscale							-1.48	0.77	-0.20
R^2		0.24			0.49			0.53	
F for change in R^2		14.74***			11.12***			$3.67^{\dagger}$	

Note.
CCCRS = Competence in Case Conceptualisation Rating Scale (Padeksy, Kuyken & Dudley, 2011).
BDI-II = Beck Depression Inventory – 2nd Edition (Beck et al., 1996).
*p<.05, **p<.01, ***p<.001, †p=0.06

The addition of hope and processing to the model resulted in a significant increase in variance explained by the model. Clients who expressed greater hopefulness and engaged in deeper emotional processing at the pre-gain session went on to report lower levels of depression at 12 months. Both hope and processing contributed significantly to predicting depression at 12 months, after controlling for pre-treatment depression. Stepwise entry of the CCCRS variables into the model evaluated whether therapist competence in the domains of case-conceptualisation predicted depression outcome over and above client hope and processing. This led to the addition of the empiricism subscale of competence as a predictor of outcome[6]. However, its unique contribution to improving the proportion of variance explained, in combination with pre-treatment depression and client hope and processing, was not quite significant; r^2 change = 0.4, $F(1,44) = 3.67$, $p=0.06$. Taken together these variables explained just over half (53%) of the variance in depression at 12 months, and indicate that clients who express greater hope and engage in emotional processing working with therapists to co-create conceptualisations that are better informed by theory at this important time of transition in therapy go on to report lower levels of depression after 12 months, even after controlling for pre-treatment depression.

Pathway mediation analysis. Only hope and pre-treatment depression were significant predictors of depression at 12 months in the final model; processing was no longer significant when the empiricism subscale of the CCCRS was included. This may suggest some shared variance with outcome and the CCCRS. The significant correlations between case-conceptualisation, processing and outcome (see Table 6) met Baron & Kenny's (1986) criteria for

[6] The Levels subscale of the CCCRS was automatically excluded from the model due co-linearity with the other CCCRS predictors.

mediation (see also univariate regression models in Appendix J). This suggested that it may be informative to test an exploratory pathway analysis. A bias-corrected bootstrapping analysis with case re-sampling and percentile confidence intervals was conducted to explore hypothesised concurrent mediation (at the pre-gain session) where more competent case-conceptualisation (independent variable) predicts improved depression at 12 months, mediated by facilitating client emotional processing (mediating variable), and controlling for pre-treatment depression. This cross-sectional strategy to examine mediation at a significant transition-point in therapy represents a tentative but feasible option suited to the exploratory nature of this question. Bootstrapping is consistent with recommendations by Fritz and MacKinnon (2007) and due to the limited power of the Baron and Kenny procedure to detect a significant finding with this small sample size.

Table 8 shows the coefficients, bootstrap standard errors and 95% bootstrap bias-corrected confidence intervals for the indirect and direct pathways.

Table 8

Regression Table Showing Coefficients, Bootstrap Standard Errors and 95% Bootstrap Bias-corrected Confidence Intervals for the Estimated Effect of Case-conceptualisation on Depression Outcome at 12 months *Directly, and Indirectly Dediated by Emotional Processing*

	Observed co-efficient	Bootstrap standard error	95% Confidence Interval	
Indirect effect	-.29	.16	-.67	-.05
Direct effect	-.32	.004	-.75	.10

Table 8 demonstrates that using percentile confidence intervals the indirect effect of competence in case-conceptualisation on depression outcome

at 12 months, mediated by emotional processing, is significant. However, it does not quite meet significance using standard confidence intervals. This suggests that the mediated effect observed is borderline. Nonetheless, it appears promising that more competent case-conceptualisation on behalf of the therapist may facilitate clients to engage in deeper emotional processing (at the critical pre-gain session), which in turn predicts improved depression outcomes for clients at 12 months.

Discussion

This paper contributes to the growing body of literature documenting non-linear trajectories of therapeutic change (e.g. Forand & DeRubies, 2013; Hayes, et al., 2007b; Vittengl, Clark, Thase & Jarrett, 2013); by suggesting a cubic pattern of change occurs over the course of CBT for treatment-resistant depression. Individual trajectories featured rapid discontinuities in symptom change. The phenomenon of sudden gains is extended to a treatment-resistant population of individuals who reported severe and chronic experiences of depression. Sudden gains of a comparable effect size, magnitude and timing were observed in this sample, yet they were slightly more prevalent than has been reported previously (e.g. Aderka et al., 2012; Hardy et al., 2005; Tang et al., 2007). Consistent with the majority of literature on sudden gains (e.g. Aderka et al., 2012; Adler et al., 2013; Tang & DeRubeis, 1999), sudden gainers enjoyed better depression outcomes at 12 months.

This study also provided preliminary evidence suggesting that sudden gains were associated with case-conceptualisation, hope and emotional processing. Sudden gainers experienced more competent case-conceptualisation and demonstrated greater hopefulness than their non-sudden gainer counterparts. Deeper processing preceded sudden gains, and was

positively related to therapist competence in case-conceptualisation, as well as client hope. Case-conceptualisation competence, hope and processing together predicted reduced depression at 12 months.

Clinically, it is possible that superior case-conceptualisation increases the probability of experiencing sudden gains in therapy. Likewise, hope for change may predispose an individual favourably towards experiencing gains in therapy. The combination of high quality case-conceptualisation and a sense of client hope, with active client processing may encourage symptom relief, which may be expressed in sudden gains. This suggests that therapists who can use case-conceptualisation effectively to support clients to process and make meaning of their experiences, during this critical window of time in therapy, may contribute to facilitating sudden gains, and in so doing, predispose clients towards longer term change and recovery. These findings align with and build upon recent literature suggesting that emotional processing and meaning making is associated with sudden gains (Adler et al., 2013) and with greater improvement during therapy for depression (Hayes, Beevers, Feldman, Laurenceau & Perlman, 2005).

Despite the fundamental role of case-conceptualisation in CBT, to our knowledge this represents the first empirical study to demonstrate that it predicts outcome. Further, a possible pathway of change is proposed, whereby more competent case-conceptualisation predicts greater therapeutic change, mediated by deeper emotional processing. This represents a preliminary finding of concurrent mediation (at the pre-gain session). Causality cannot be assumed as it does not meet the criterion for causal inference that states that the independent variable must temporally precede the mediating variable (Haynes & O'Brien, 2000). Nonetheless, from a clinical perspective, the competence with

which a therapist facilitates conceptualisation of experiences may influence the degree to which that individual is able to process and make meaning of issues related to their depression *in the moment*, rather than carry forward to a later session. Therefore, whilst this finding must be viewed as preliminary, it suggests an avenue for future research to investigate more closely the interactive processes between therapist and client that may be influential in facilitating change.

Another possible interpretation of the shared variance between emotional processing and case-conceptualisation competence is that both are measuring an overlapping construct of meaning making, albeit from the different perspectives of client and therapist, rather than reflecting a process of mediation. In this study, client emotional processing was rated by the CHANGE, while the CCCRS rated therapist competence in case-conceptualisation. Nevertheless, case-conceptualisation is inherently an interactive and collaborative process between client and therapist. If we are to better understand patterns of change in therapy and how they occur it seems important to examine all aspects of the therapy process (therapist, client and their interaction) during these periods of transition (Lambert & Hill, 1994; Llewellyn & Hardy, 2001).

In exploring the impact of the gain on therapy this study hints towards a trend for deeper emotional processing and hope to emerge following a gain. While these effects were statistically non-significant after correcting for multiple tests in this small sample (n=25), the rate and magnitude of the changes during the single sudden gain interval make them noteworthy. Hope and processing were significantly positively related at sessions proximal to sudden gains. One possible hypothesis is that experiencing a sudden gain validates early residual

hope and may help to foster an emergent sense of hope and commitment for change. This may prime clients' active engagement in the process and tasks of therapy, including efforts to approach, explore and make meaning of their experiences of depression. This aligns with writing on the facilitative role of hope in the process of therapy (Hoffart & Sexton, 2002; Kuyken, 2004; Snyder, Ilardi, Cheavens, Michael, Yamhure & Sympson, 2000). Sudden gains may therefore present an opportunity for the chronic, defensive and avoidant cognitive and behavioural processes that constrict change to be approached and worked upon, thereby unlocking the depressive system to allow onward therapeutic change. This hypothesis is consistent with the concept of Tang and DeRubeis' (1999) upward spiral hypothesis and with Hayes et al.'s suggestion that early change might facilitate later processing (2007b). However, the lack of data on non-sudden gainers "post-gain" means that more research is needed to understand the impact of sudden gains on later therapy.

Therapist competence in utilising empirically sound conceptualisations, together with greater client expressions of hope and engagement in emotional processing at pre-gain predicted reduced depressive severity at 12 months, after controlling for pre-treatment depression. These variables held no predictive value when measured at the second therapy session or after the gain had occurred. This supports the notion that sudden gains signify a critical period of transition in the process of therapeutic change (Tang & DeRubeis, 1999; Hayes et al., 2007a) and so can be utilised as a marker of where to focus analysis to examine causal mechanisms of change.

Study Strengths and Limitations

This study has methodological strengths and limitations. It is embedded within a high-quality randomised controlled trial examining a clinical population

for whom the process of therapeutic change is under-researched, but especially meaningful given the entrenched nature of the depressive system in treatment-resistant clients. It examines both client and therapist processes during “critical” therapy sessions and compares them to both between and within-person controls to characterise processes of change during transition. The CCCRS and CHANGE are well suited to explore the constructs under examination; however, it is acknowledged that as they are contemporary scales, their psychometric properties are still being established.

Whilst the cubic growth term was significant and provided the best fit to the data; the cubic shape is not pronounced in the average trajectory. The high degree of interindividual variation in trajectories limits the face validity of an average trajectory and illustrates the limitations of aggregating data to predict an average trajectory of change. Nevertheless, this study has not considered more complex patterns of change (such as spline functions) that may provide a better estimation of change to capture the rapid discontinuities apparent within individual trajectories. It would be fruitful to examine interindividual variation in trajectories to identify covariates that moderate the shape and rate of change. Latent class analysis could identify sub-groups of trajectories to examine whether different trajectories are associated with outcome. However, these increasingly complex modelling functions were beyond the scope of this study, which set out to describe the shape of change observed over the course of CBT for treatment resistant depression.

This study suggests a role for hope and processing in understanding the impact of sudden gains on later therapy. It was a limitation of this study that the corresponding “post-gain” session did not have a between-person control, restricting the conclusions that may be drawn about the impact of the gain on

therapy. However, process coding of therapy sessions is time-intensive and resource constraints rendered this unfeasible here. Future research can address this by analysing this period of therapy in both gainers and non-gainers to try to illuminate the *impact* of the gain on important processes of therapy thereafter, and to empirically evaluate the upward spiral hypothesis (Tang & DeRubeis, 1999).

The CBT was delivered in the context of a randomised controlled trial, a strength of this context was the well qualified and competent therapists, which increases the internal validity of the study. However, future research may wish to extend findings to more naturalistic clinical settings with greater variability in therapist training and competence to increase external validity. The CoBalT usual care group was not included in this study because neither longitudinal symptom measures nor therapy audio-recordings were collected from these participants. This would be a valuable step, to directly compare trajectories of change and the concomitant processes of change between CBT and usual care groups, to assess whether CBT operates a causal role in the process and trajectory of therapeutic change. This could also help to establish whether discontinuities in symptom change are a part of the natural course of depression.

As with all research on sudden gains, causality of effects cannot be determined. This paper reports some exploratory, correlational findings together with efforts to understand their clinical meaning. For example, the exploratory mediation model presented here represents one hypothesised pathway for change, consistent with the pattern of emergent findings. However, it is acknowledged that there are many more possible pathways for change. These tentative findings may inform future research to examine hypothesised

pathways using more advanced procedures such as structural equation modelling and with more power, which may help to ascertain their validity as causal agents of therapeutic change. A possible future step to address causality could be to manipulate the variables under question. For example, by comparing usual care, with standard CBT and CBT augmented with focused training to enhance competence in using case-conceptualisation to facilitate client processing and meaning making.

Conclusions

This study suggests that the course of CBT for treatment resistant depression can best be characterised as cubic, featuring prevalent and rapid discontinuities in symptom change. It further validates the clinical significance of sudden gains, by suggesting that they represent a meaningful transition point in therapy for depression and contribute to sustained wellness, even in treatment-resistant cases. These findings add to a growing body of literature emphasising the importance of studying the shape of therapeutic change, and the suggestion that non-linear trajectories represent important transitions and reorganizations within the depressive network (e.g. Hayes et al., 2007a). Therefore, focusing analysis on periods of rapid symptom change can aid understanding of therapy processes and mechanisms of change. Finally, this paper provides preliminary findings suggesting that therapists can support clients in emotional processing and making meaning of their experience by practicing competent case-conceptualisation, and together with a hope for change, these processes may be instrumental in bringing about sudden gains and contributing to improved depression outcomes.

References

Aderka, I. M., Nickerson, A., Bøe, H. J., & Hofmann, S. G. (2012). Sudden gains during psychological treatments of anxiety and depression: A meta-analysis. *Journal of Consulting and Clinical Psychology*, *80*(1), 93-101.

Adler, J. M., Harmeling, L. H., & Walder-Biesanz, I. (2013). Narrative meaning making is associated with sudden gains in psychotherapy clients' mental health under routine clinical conditions. *Journal of Consulting and Clinical Psychology*, *81*(5), 839-845.

Andrusyna, T. P., Luborsky, L., Pham, T., & Tang, T. Z. (2006). The mechanisms of sudden gains in supportive–expressive therapy for depression. *Psychotherapy Research*, *16*(5), 526-536.

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Beck, A., Rush, A.J., Shaw, B., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Wiley; 1979.

Beck A., Steer R.A., & Brown G.K., (1996). *Beck Depression Inventory - Second Edition: Manual*. San Antonio, TX: The Psychological Corporation.

Beck, J. (1995). *Cognitive therapy: Basics and beyond.* New York, NY: Guildford Press.

Bieling, P. J., & Kuyken, W. (2003). Is cognitive case formulation science or science fiction? *Clinical Psychology: Science and Practice, 10,* 52–69.

Blackburn, I.-M., James, I.A., Milne, D.L., Baker, C., Standart, S., Garland, A., & Reichelt, F.K. (2001). The revised cognitive therapy scale (CTS-R):

psychometric properties. *Behavioural and Cognitive Psychotherapy., 29,* 431-446.

Bohn, C., Aderka, I. M., Schreiber, F., Stangier, U., & Hofmann, S. G. (2013). Sudden gains in cognitive therapy and interpersonal therapy for social anxiety disorder. *Journal of Consulting and Clinical Psychology*, *81*(1), 177.

DeRubeis, R.J., Gelfand, L.A., Tang, T.Z., & Simons, A.D. (1999). Medications versus cognitive behavior therapy for severely depressed outpatients: Mega-analysis of four randomized comparisons. *American Journal of Psychiatry, 156,* 1007 – 1013.

DeRubeis, R.J., Hollon, S.D., Amsterdam, J.D., Shelton, R.C., Young, P.R., Salomon, R.M., ... & Gallop, R. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62*(4)*,* 409 - 416.

Drymalski, W. M., & Washburn, J. J. (2011). Sudden gains in the treatment of depression in a partial hospitalization program. *Journal of Consulting and Clinical Psychology*, *79*(3), 364.

Fava, M., (2003). Diagnosis and definition of treatment-resistant depression. *Biological Psychiatry, 53,* 649-659.

Fennell, M.J.V., & Teasdale, J.D. (1987). Cognitive therapy for depression: Individual differences and the process of change. *Cognitive Therapy and Research, 11*(2), 253-271.

Field, A., (2013). *Discovering statistics using IBM SPSS statistics (4th ed.).* London, UK: Sage.

Forand, N. R., & DeRubeis, R. J. (2013). Pretreatment anxiety predicts patterns of change in cognitive behavioral therapy and medications for depression. *Journal of Consulting and Clinical Psychology*, *81*(5), 774-782.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, *18*(3), 233-239.

Gaynor, S. T., Weersing, V. R., Kolko, D. J., Birmaher, B., Heo, J., & Brent, D. A. (2003). The prevalence and impact of large sudden improvements during adolescent therapy for depression: A comparison across cognitive-behavioral, family, and supportive therapy. *Journal of Consulting and Clinical Psychology*, *71*(2), 386-393.

Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models.* New York, NY: Cambridge University Press.

Gerger, H., Munder, T., & Barth, J. (2013). Specific and Nonspecific Psychological Interventions for PTSD Symptoms: A Meta-Analysis with Problem Complexity as a Moderator. *Journal of Clinical Psychology.*

Goodridge, D., & Hardy, G. E. (2009). Patterns of change in psychotherapy: An investigation of sudden gains in cognitive therapy using the assimilation model. *Psychotherapy Research*, *19*(1), 114-123.

Hardy, G. E., Cahill, J., Stiles, W. B., Ispan, C., Macaskill, N., & Barkham, M. (2005). Sudden gains in cognitive therapy for depression: a replication and extension. *Journal of Consulting and Clinical Psychology*, *73*(1), 59-67.

Hayes, A.M., Beevers, C., Feldman, G., Laurenceau, J.-P., & Perlman, C.A. (2005). Avoidance and emotional processing as predictors of symptom change and positive growth in an integrative therapy for depression. *International Journal of Behavioral Medicine, 12,* 111–122.

Hayes, A.M., Feldman, G.C., Beevers, C.G., Laurenceau, J.-P., Cardaciotto, L., Lewis-Smith, J. (2007b). Discontinuities and cognitive changes in an exposure-based cognitive therapy for depression. *Journal of Consulting and Clinical Psychology 75,* 409–421.

Hayes, A.M., Feldman, G.C., & Goldfried, M.R. (2006). The Change and Growth Experiences Scale: A measure of insight and emotional processing. In L.G. Castonguay & C. Hill (Eds.), *Insight in psychotherapy* (pp. 231–253). Washington, DC: American Psychological Association.

Hayes, A.M., Laurenceau, J.-P., & Feldman, G.C., Strauss, J.L., & Cardaciotto, L.A. (2007a). Change is not always linear: The study of nonlinear and discontinuous patterns of change in psychotherapy. *Clinical Psychology Review, 27,* 715-723.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*(6), 1152 – 1168.

Haynes, S. N., & O'Brien, W. H. (2000). *Principles and practice of behavioral assessment*. New York, NY: Springer.

Hoffart, A., & Sexton, H. (2002). The role of optimism in the process of schema-focused cognitive therapy of personality problems. *Behaviour Research and Therapy*, *40*(6), 611-623.

Hofmann, S. G., Schulz, S. M., Meuret, A. E., Moscovitch, D. A., & Suvak, M. (2006). Sudden gains during therapy of social phobia. *Journal of Consulting and Clinical Psychology*, *74*(4), 687-697.

Hollinghurst, S., Carroll, F. E., Abel, A., Campbell, J., Garland, A., Jerrom, B., ... & Wiles, N. (2014). Cost-effectiveness of cognitive-behavioural therapy as

an adjunct to pharmacotherapy for treatment-resistant depression in primary care: economic evaluation of the CoBalT Trial. *The British Journal of Psychiatry*, *204*(1), 69-76.

Hollon, S.D., Thase, M.E., & Markowitz, J.C. (2002). Treatment and prevention of depression. *Psychological Science in the Public Interest, 3,* 39–77.

Hollon, S.D., DeRubeis, R.J., Shelton, R.C., Amsterdam, J.D., Salomon, R.M., O'Reardon, J.P., ... Gallop, R. (2005). Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Archives of General Psychiatry, 62,* 417-422.

Hunnicutt-Ferguson, K., Hoxha, D., & Gollan, J. (2012). Exploring sudden gains in behavioral activation therapy for major depressive disorder. *Behaviour Research and Therapy*, *50*(3), 223-230.

Ilardi, S.S., & Craighead, W.E. (1994). The role of nonspecific factors in cognitive behavior therapy for depression. *Clinical Psychology: Science and Practice, 1,* 138–156.

Jacobson, N.S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12-19.

Jun, J. J., Zoellner, L. A., & Feeny, N. C. (2013). Sudden gains in prolonged exposure and sertraline for chronic PTSD. *Depression and Anxiety*, *30*(7), 607-613.

Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology, 3,* 1-27.

Keller, S. M., Feeny, N. C., & Zoellner, L. A. (2014). Depression sudden gains and transient depression spikes during treatment for PTSD. *Journal of Consulting and Clinical Psychology*, *82*(1), 102-111.

Kelly, M. A., Cyranowski, J. M., & Frank, E. (2007). Sudden gains in interpersonal psychotherapy for depression. *Behaviour Research and Therapy*, *45*(11), 2563-2572.

Kelly, M.A., Roberts, J. E., & Bottonari, K. A. (2007). Non-treatment-related sudden gains in depression: The role of self-evaluation. *Behaviour Research and Therapy*, *45*(4), 737-747.

Kelly, M.A., Roberts, J.E., & Ciesla, J.A. (2005). Sudden gains in cognitive behavioral treatment for depression: When do they occur and do they matter? *Behaviour Research and Therapy, 43,* 703-714.

Kuyken, W. (2004). Cognitive therapy outcome: The effects of hopelessness in a naturalistic outcome study. *Behaviour Research and Therapy*, *42*(6), 631-646.

Kuyken, W., Padesky, C.A., & Dudley, R. (2009). *Collaborative case conceptualization: Working effectively with clients in cognitive-behavioral therapy*. New York, NY: Guilford.

Lambert, M. J. (2005). Early response in psychotherapy: Further evidence for the importance of common factors rather than “placebo effects”. *Journal of Clinical Psychology*, *61*(7), 855-869.

Lambert, M. J. (2011). What have we learned about treatment failure in empirically supported treatments? Some suggestions for practice. *Cognitive and Behavioral Practice*, *18*(3), 413-420.

Lambert, M. J., & Hill, C. E. (1994). *Assessing psychotherapy outcomes and processes*. In A. E. Bergin & S. L. Garfield (Eds.). Handbook of psychotherapy and behaviour change (4th ed., pp. 72–113). New York: Wiley.

Laurenceau, J -P., Hayes, A.M., & Feldman, G.C., (2007). Statistical and methodological issues in the study of change in psychotherapy. *Clinical Psychology Review, 27*, 682−695.

Lewis, G., Pelosi, A.J., Araya, R., & Dunn, G. (1992). Measuring psychiatric disorder in the community: a standardized assessment for use by lay interviewers. *Psychological Medicine, 22*, 465-486.

Llewelyn, S., & Hardy, G. (2001). Process research in understanding and applying psychological therapies. *British Journal of Clinical Psychology*, *40*(1), 1-21.

Lorenz, T. A., Pulverman, C. S., & Meston, C. M. (2013). Sudden gains during patient-directed expressive writing treatment predicts depression reduction in women with history of childhood sexual abuse: Results from a randomized clinical trial. *Cognitive Therapy and Research*, *37*(4), 690-696.

Mathers, C.D. & Loncar, D. (2005). *Updated projections of global mortality and burden of disease, 2002-2030: Data sources, methods and results (working paper).* Geneva: WHO, 2005.

Medical Research Council (2008). *Developing and evaluating complex interventions: New guidance.* London: Medical Research Council.

Moore, R. G. & Garland, A. (2003). *Cognitive therapy for chronic and persistent depression*. Chichester, UK: Wiley.

Padesky, C. A., Kuyken, W., & Dudley, R. (2011). *The Collaborative Case Conceptualization Rating Scale (CCC-RS)*. Unpublished manuscript. Retrieved from http://www.padesky.com/resources

Renaud, J., Brent, D.A., Baugher, M., Birmaher, B., Kolko, D.J., & Bridge, J. (1998). Rapid response to psychosocial treatment for adolescent

depression: A two-year follow-up. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(11), 1184–1191.

Rush, A.J., Beck, A.T., Kovacs, M., & Hollon, S. (1977). Comparative efficacy of cognitive therapy and pharmacotherapy in the treatment of depressed outpatients. *Cognitive Therapy and Research, 1,* 17-37.

Singer, J.D., & Willet, J.B. (2003). *Applied longitudinal data analysis: Modelling change and event occurrence.* New York, NY: Oxford University Press

Snyder, C. R., Ilardi, S. S., Cheavens, J., Michael, S. T., Yamhure, L., & Sympson, S. (2000). The role of hope in cognitive-behavior therapies. *Cognitive Therapy and Research*, *24*(6), 747-762.

Tang, T.Z., & DeRubeis, R.J. (1999). Sudden gains and critical sessions in cognitive behavioural therapy for depression. *Journal of Consulting and Clinical Psychology, 67,* 894–904.

Tang, T. Z., DeRubeis, R. J., Beberman, R., & Pham, T. (2005). Cognitive changes, critical sessions, and sudden gains in cognitive-behavioral therapy for depression. *Journal of Consulting and Clinical Psychology*, *73*(1), 168-172.

Tang, T.Z., DeRubeis, R.J., Hollon, S.D., Amsterdam, J., & Shelton, R. (2007). Sudden gains in cognitive therapy of depression and depression relapse/recurrence. *Journal of Consulting and Clinical Psychology, 75*(3), 404-408.

Tang, T.Z., Luborsky, L., & Andrusyna, T. (2002). Sudden gains in recovering from depression: Are they also found in psychotherapies other than cognitive-behavioral therapy? *Journal of Consulting and Clinical Psychology, 70,* 444−447.

Thomas, L. J., Abel, A., Ridgway, N., Peters, T., Kessler, D., Hollinghurst, S., ... & Wiles, N. (2012). Cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment resistant depression in primary care: the CoBalT randomised controlled trial protocol. *Contemporary Clinical Trials*, *33*(2), 312-319.

Trivedi, M.H., Fava, M., Wisniewski, S.R., Thase, M.E., Quitkin, F.M., Warden, D. … Rush, J. (2006). Medication augmentation after the failure of SSRIs for depression. *New England Journal of Medicine,* 354, 1243-1252.

Vittengl, J.R., Clark, L.A., & Jarrett, R.B. (2005). Validity of sudden gains in acute phase treatment of depression. *Journal of Consulting and Clinical Psychology, 73,* 173–182.

Vittengl, J. R., Clark, L. A., Thase, M. E., & Jarrett, R. B. (2013). Nomothetic and idiographic symptom change trajectories in acute-phase cognitive therapy for recurrent depression. *Journal of Consulting and Clinical Psychology*, *81*(4), 615-626.

Whipple, J. L., Lambert, M. J., Vermeersch, D. A., Smart, D. W., Nielsen, S. L., & Hawkins, E. J. (2003). Improving the effects of psychotherapy: The use of early identification of treatment and problem-solving strategies in routine practice. *Journal of Counseling Psychology*, *50*(1), 59- 68.

Wiles, N., Thomas, L., Abel, A., Ridgway, N., Turner, N., Campbell, J., ... & Lewis, G. (2013). Cognitive behavioural therapy as an adjunct to pharmacotherapy for primary care based patients with treatment resistant depression: results of the CoBalT randomised controlled trial. *The Lancet*, *381*(9864), 375-384.

Appendix A.

Search Strategy

The following electronic databases were searched: PsycARTICLES, PsycINFO, ISI Web of Knowledge. The search terms “depression” and “cognitive therapy” were used in combination with the following terms one by one “change patterns”, “sudden gains”, “depression spikes” and “rapid early responses” to identify papers for review. The searches were limited to articles published in peer-reviewed journals. Articles were included if they reported an original empirical study of a discontinuous pattern of symptom change observed over the course of cognitive therapies for depression. Relevant papers identified by cross-referencing were included additionally, including those in non-cognitive therapies, where comparison was considered to be informative. Figure A1 illustrates the search process using a flow chart to show the identification of literature for the sudden gains part of the review.

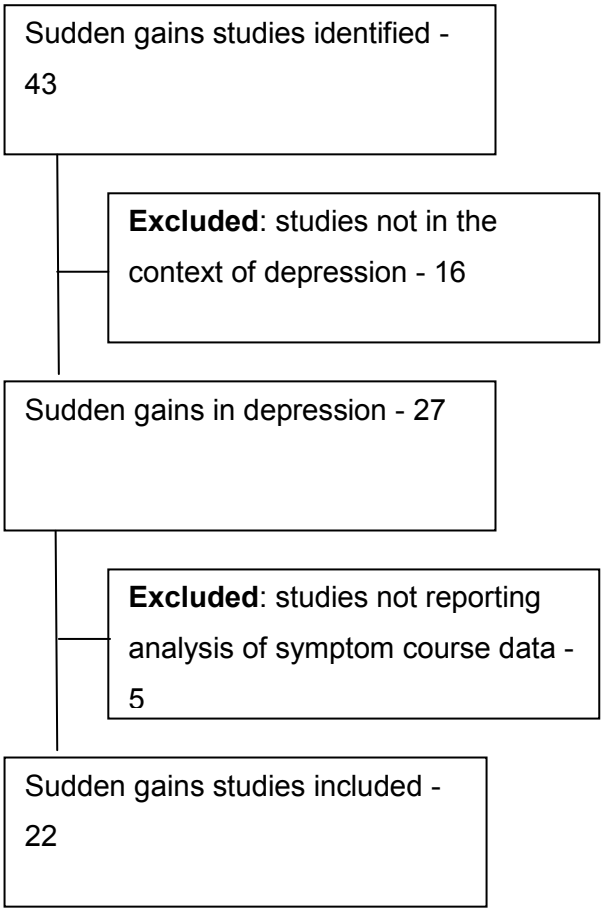


Figure A1. Flow chart depicting the search strategy to identify literature included in review relevant to sudden gains.

Appendix B

Research Ethics Committee Approval for the CoBalT Study

07/H1208/60

Page 1

NHS

National Research Ethics Service

West Midlands Research Ethics Committee

Osprey House
Albert Street
Redditch
Worcestershire, B97 4DE

Telephone: 01527 587573
Facsimile: 01527 587501

Acting Chairman: Mr Paul Hamilton
Co-ordinator: Mrs Anne McCullough

26 February 2008

Full title of study: **Cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment resistant depression in primary care: a randomised controlled trial**

REC reference number: **07/H1208/60**

Thank you for your letter of 11 January 2008, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Vice Chair.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The Committee has not yet been notified of the outcome of any site-specific assessment (SSA) for the research site(s) taking part in this study. The favourable opinion does not therefore apply to any site at present. We will write to you again as soon as one Research Ethics Committee has notified the outcome of a SSA. In the meantime no study procedures should be initiated at sites requiring SSA.

Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

07/H1208/60

Document	*Version*	*Date*
Application		19 October 2007
Investigator CV		15 October 2007
Protocol	2	11 January 2008
Letter from Sponsor		09 August 2007
Statistician Comments	email	10 August 2007
Compensation Arrangements		09 August 2007
Questionnaire: Patient Health Questionnaire		
Questionnaire: Brief Patient Health Questionnaire - [PHQ-9] - Panic		
Questionnaire: Life Evems Questionnaire		
Questionnaire: Personality Beliefs Questionnaire - Short Form		
Questionnaire: Exit Questionnaire	1	15 October 2007
Letter of invitation to participant	1	15 October 2007
Participant Information Sheet: QualInterviews	1	12 October 2007
Participant Consent Form: QualInterviews	1	15 October 2007
Participant Consent Form	2	11 January 2008
Response to Request for Further Information		11 January 2008
Patient Information Leaflet-GPInvite_PtInfoLeaflet	2	09 January 2008
Patient Information Leaflet-GPRecordsearch_PtInfoLeaflet)	2	09 January 2008
Patient Information Leaflet-Pt_TrialinfoLeaflet	2	11 January 2008
Index to documents		
GP Record Search for Patient Referrals	1	15 October 2007
GP Information Sheet	1	12 October 2007
GP Letter	1	12 October 2007
GP Patient Referral	1	15 October 2007
Reminder Invitation	1	12 October 2007
Initial Patient Questionnaire - Covering letter	1	12 October 2007
Permission for Release of Personal Details	1	12 October 2007
Initial Patient Questionnaire - Cover Letter	1	12 October 2007
Consent to Pass Information to GP	1	12 October 2007
GP Feedback from Postal Screening	1	12 October 2007
Consent to Pass information to GP - Computer Questionnaire	1	15 October 2007
Introduction to Cognitive Behavioural Therapy	1	18 October 2007
GP Feedback PTA	1	15 October 2007
Topic Guide for usual care	1	15 October 2007
Topic Guide for CBT arm	1	15 October 2007
Flowchart	1	15 October 2007
Letter re Funding		25 June 2007
Letter to confirmation appointment with researcher-Confirm_PTA	2	09 January 2008
COBALT suicide policy	1	15 October 2007
Example questions for Economic Evaluation - Use of health services		
Alcohol consumption and smoking		
EQ5D		
Clinical interview schedule - Revised Version [CIS-R]		
5-Item Mental Health Inventory		
Adherence Questions		
Beck Depression Inventory [BDI]		
Anxiety - GAD- 7		
SF-12 Your health and well-being		

R&D approval

All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so. R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

Here you will find links to the following

a) Providing feedback. You are invited to give your view of the service that you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.
b) Progress Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
c) Safety Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
d) Amendments. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
e) End of Study/Project. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk .

07/H1208/60	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

Appendix C

NHS Research & Development Approval for the CoBalT study

Devon NHS

Study No: PCT0580 (07/H1208/60) Cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment resistant depression in primary care: a randomised controlled trial (COBALT)

I have reviewed the Trust Research Governance file for your study and I am happy to give approval on behalf of the Trust.

Adverse Events
Can I remind you that you must report to the Research Governance Unit any serious adverse event occurring during the study quoting the study reference number. This requirement is in addition to informing the Chairman of the Local Ethics Committee.

Outcome and publications
You must also submit to the Research Governance Unit a final outcome report on completion of your study. If your study takes longer than a year annual reports on progress will be needed. If you publish please send copies to the Research Management & Governance Unit, Dean Clarke House, Southernhay East, Exeter EX1 1PQ, for inclusion in our Research Governance file for your study.

Research Governance
I would like to take this opportunity to remind you of your responsibilities as an NHS researcher. These are:

1. Work must be carried out in line with the new Research Governance Framework for Health and Social Services, which details the responsibilities for everyone involved in research
2. The Data Protection Act 1998 requires you to follow the eight principles of "good information handling"
3. You must be aware of, and comply with, Health and Safety standards in relation to your research.

More information about all these responsibilities can be found on the Research Management & Governance website at www.swpctresearch.nhs.uk

With best wishes for a successful study.

Yours sincerely

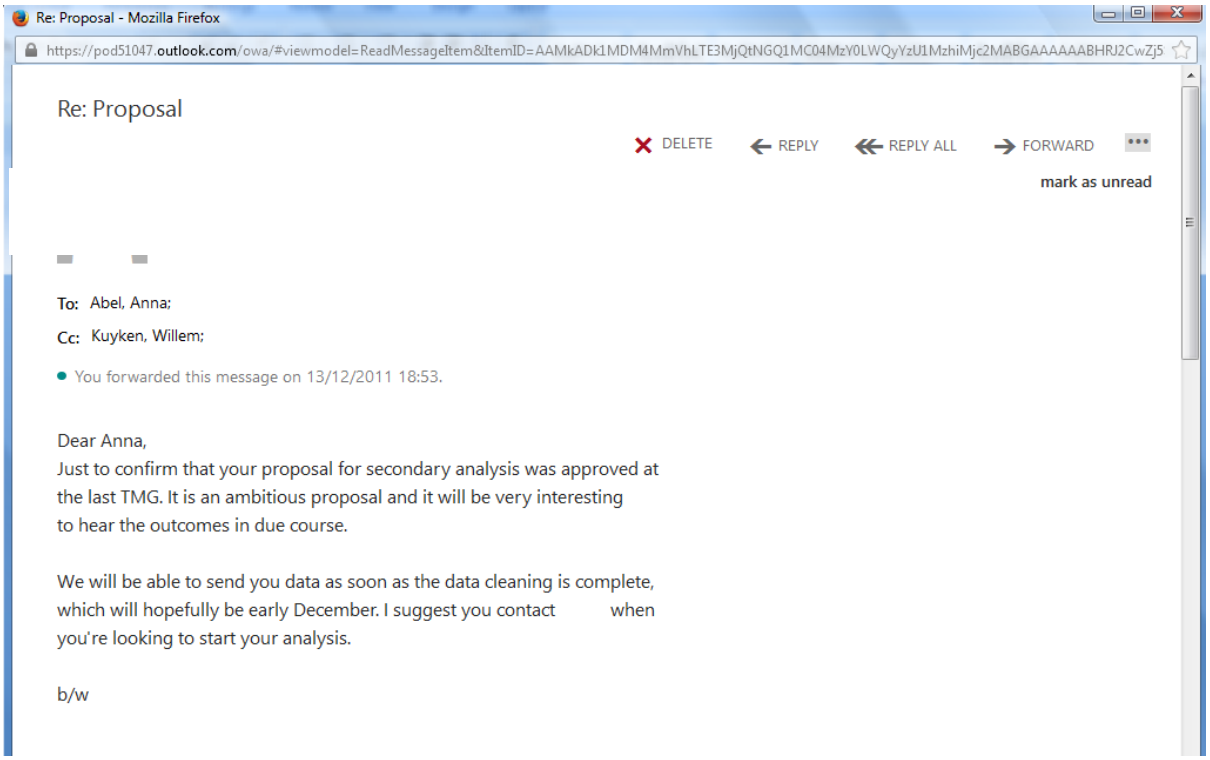
Research Governance Lead, Devon PCT

c

ıol;

Appendix D

CoBalT Trial Management Group Approval for Secondary Analysis



Appendix E

University of Exeter Ethics Committee Approval for this study

Psychology Research Ethics Committee

Psychology, College of Life & Environmental Sciences

Washington Singer Laboratories
Perry Road
Exeter
EX4 4QG

Telephone
Fax +44 (0)1392 724623
Email Marilyn.evans@exeter.ac.uk

To: **Anna Abel**

From: **Cris Burgess**
CC: **Willen Kuyken**

Re: **Application 2011/540 Ethics Committee**
Date: **July 24, 2014**

The School of Psychology Ethics Committee has now discussed your application, ***2011/540 – Examining the process of change in cognitive behaviour therapy (CBT) for treatment-resistant depression .*** The project has been approved in principle for the duration of your study.

The agreement of the Committee is subject to your compliance with the British Psychological Society Code of Conduct and the University of Exeter procedures for data protection (http://www.ex.ac.uk/admin/academic/datapro/). In any correspondence with the Ethics Committee about this application, please quote the reference number above.

I wish you every success with your research.

Cris Burgess
Chair of Psychology Research Ethics Committee

Appendix F

CoBalT Participant Consent Form

Patient Consent Form

Title of project: Cognitive behavioural therapy for depression (CoBalT)
Trial Registration Number: ISRCTN38231611
Chief Investigator: Dr Nicola Wiles, University of Bristol

Centre: Bristol / Exeter / Glasgow

PART 1: To be completed by ALL patients

		Please initial the box
1.	I have read and understood the information sheet dated 11th Jan 2008 (Version 2) for the above study, and been given a copy to keep	☐
2.	I have had the opportunity to consider the information, and ask any questions. I have had satisfactory answers to all of my questions	☐
3.	I have received enough information about the study	☐
4.	I understand that I may not be eligible to take part in the study	☐
5.	I understand that details of my participation will be stored anonymously on file and may be used in the final analysis of data	☐
6.	I agree to complete the screening questionnaires	☐

Name of Patient (BLOCK CAPITALS) _____ **Date** _____ **Signature** _____

I have explained the study to the above patient and he/she has indicated his/her willingness to take part in the screening questionnaires.

Name of Researcher (BLOCK CAPITALS) _____ **Date** _____ **Signature** _____

3 copies of form:
1 for patient; 1 for researcher site file; 1 to be kept in medical notes

Version 2, 11 January 2008 NRES_07/H1208/60 PT_ConsentForm_v2.doc

PART 2a: To be completed by ELIGIBLE patients only

		Please initial ONE box Yes	No
7.	I give my permission for responsible individuals from the COBALT study team (which includes researchers based at the University of Bristol, the University of Exeter, the Peninsula Medical School and the University of Glasgow), to have access to any of my medical records	☐	☐
8.	I give my permission for any CBT treatment sessions to be audio-recorded for research purposes, including use in future research studies on CBT for depression	☐	☐
9.	I give my permission for any CBT treatment sessions to be audio-recorded for teaching purposes. I understand that audio clips from these recordings may be used in presentations and that this might mean I am not completely anonymous if someone recognises my voice.	☐	☐
10.	I understand that data collected during the study (including information from my medical records) may be looked at by responsible individuals from the COBALT study team, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research	☐	
11.	I understand that I may be contacted by a member of the research team to discuss my views and experiences of CBT or other treatments for depression	☐	
12.	I understand that my participation is voluntary, and that I am free to withdraw at any time, without giving any reason, and without my medical care or legal rights being affected	☐	
13.	I understand that my GP will be informed of my participation in the study	☐	
14.	I agree to take part in this study	☐	☐

PART 2b: To be completed by ELIGIBLE patients only

	Consent for future contact Please indicate below whether or not you are willing to be contacted in the future	Please initial ONE box Yes	No
15.	I am willing to be contacted about any projects on depression that may be planned in the future. I understand that if I have moved you will use the NHS Central Register to obtain my new address.	☐	☐

_____	_____	_____
Name of Patient (BLOCK CAPITALS)	**Date**	**Signature**

I have explained the study to the above patient and he/she has indicated (a) his/her willingness to take part in the study and (b) whether or not they are willing to be contacted in the future.

_____	_____	_____
Name of Researcher (BLOCK CAPITALS)	**Date**	**Signature**

3 copies of form:
1 for patient; 1 for researcher site file; 1 to be kept in medical notes

Appendix G

Extended Method

Ethical Considerations

Only data from clients who explicitly consented to use of their data and session audio-recordings in future research was available for inclusion in these analyses. Anonymised codes were used to identify CoBalT therapists and clients, the researchers did not have access to identifiable data. The master dataset remained at the co-ordinating trial centre[7]; an anonymised sub-dataset was stored securely on the University of Exeter server with access restricted to the author, principal supervisor and the three coders who rated the audio-data for the process analysis. Audio-recordings where anonymity was breached were not made available for inclusion in this study. Consent for audio-recording of therapy sessions was checked prior to each therapy session. Participants had the right to withdraw consent for the recording at any time.

Therapy and Therapists

Therapists had been practising therapy for a mean of 9.7 years (SD=8.1). Training and regular supervision were delivered by experienced personnel. The level of therapist competence observed in the main trial according to the Cognitive Therapy Rating Scale (CTS-R; Blackburn et al. 2001) exceeded that expected by UK CBT training programmes ((Mean= 38.8, SD=8.0) Wiles et al., 2012).

Measures

Consistent with Adele Hayes' theoretical orientation and assumptions, CHANGE was developed in the spirit of positive psychology and with the explicit aim to measure insight and processing in the context of therapy (Hayes et al.

[7] University of Bristol

2005, 2006). It was preferred here to other potential coding instruments, such as the experiencing scale (Klein, Mathieu-Coughlan & Kiesler, 1986), to favour comparison with previous research examining discontinuities of change (Adler et al., 2013; Hayes et al., 2007b) and to capture a cognitive-affective form of insight and processing.

The CCCRS coders showed good inter-rater agreement on a sample of double-rated tapes (ICC=0.825).

Sudden Gains Reversals

Rates of reversal of sudden gains were examined to assess the stability of sudden gains. A reversal occurred when at least 50% of the gain was lost before the end of therapy (Tang & DeRubeis, 1999).

Reliable Change Index

The reliable change index was calculated according to Jacobson & Truax formula (1991) using the BDI-II test-retest reliability estimate of 0.93, consistent with the BDI-II manual (Beck, Steer & Brown, 1996).

Appendix H

Change and Growth Experiences Scale Manual

Last updated: September 2010

Change and Growth Experiences Scale (CHANGES)

CLIENT VARIABLES

Adele M. Hayes[1]

University of Delaware

Greg C. Feldman

Simons College

[1]Corresponding author. University of Delaware, Dept. of Psychology, 108 Wolf Hall, Newark, DE 19716-2577
Ph: 302-831-0484, Fax: 302-831-6393, e-mail: ahayes@psych.udel.edu

CODING OVERVIEW

This coding system is designed to study the variables associated with change in therapy or in adaptation to life events. The CHANGE assesses client or participant variables, as well as therapist interventions.

CHANGE Client Variables can be used to code essays or therapy sessions. The coding system assesses seven content areas and three client processes. The content areas are rated for intensity (low, medium, high) and valence (positive and negative), and the processes are rated at three levels (low, medium, and high).

The content areas are:

- **View of the Self**
- **Sense of Hope**
- **Emotion**
- **Behavior**
- **Somatic Functioning**
- **Perceived Relationship Quality**
- **Historical Antecedents of Current Problems**

The process variables are:

- **Protection/Avoidance**
- **Cognitive/Emotional Processing**
- **Unproductive Processing**

The **coding categories are not mutually exclusive**, which means that categories overlap and can co-occur. For instance, there can be both positive and negative emotion in the same essay or session. The categories of emotion and somatic functioning often overlap.

When coding a series of essays or a course of therapy, **consider the context** provided by the previous essays or sessions. At times, the person will refer loosely to previous content. For instance, a person might talk about past failures and feelings of incompetence and then in subsequent essays or sessions say, "I screwed up again. Here we go again, I feel horrible." The terms, "screwed up again" and "here we go again" refer back to the more explicitly articulated negative view of the self and cycle of self-criticism from previous essays or sessions. Someone who experienced a trauma might refer to it as "that day" or "that horrible time" in the sessions after they explain what happened.

In using context, consider the person's baseline but also use a standard scale so that comparisons can be made across individuals. For instance, when coding the material from someone who is depressed, the emotional tone is often consistently negative. In this context, a glimmer of positive emotion can appear to warrant a high rating, when it should actually be coded as low. Similarly, in the context of chronic anxiety, a mildly positive event can seem to warrant a high positive emotion rating because the baseline is so low. Be careful of this **baseline bias**.

THE CODING PROCESS

Before coding, **read or listen through all of the material once** and take notes as you go. The notes will help you to remember the reasons for your coding decisions and will help you in the discussions in the consensus meetings. If you find a given section or category particularly difficult to code, you might want to make note of the issues and what went into your decision. The coding meeting might be a week after you've coded the passage, and this will help you to remember your thought process.

When coding, you want to **try to balance attention to details with an ability to think abstractly** and see the bigger picture. It is also important to maintain focus by pacing yourself carefully. It is difficult to code accurately when you are rushed or code in binges. In the discussion meetings, it helps to present your questions and confusions and to agree with others only when the consensus makes sense. Coding requires an **openness and flexibility but not acquiescence**.

Rate each category from **0** to **3** (or as "**absent**" or "**present**" for bivariate categories), using the scale relevant for that category. Please make sure that all of the categories for each essay or session are completed.

CONTENT OF THE ESSAY/SESSION

INSTRUCTIONS:

Rate the intensity of the following areas focused on in the essay or during the session. For this section, the intensity (0-3) and valence (positive or negative) are considered.

INTENSITY

0 = NONE
1 = LOW
2 = MEDIUM
3 = HIGH

CONTENT AREAS AND VALENCE

NEGATIVE	POSITIVE
1. View of the Self	1. View of the Self
2. Sense of Hope/Growth/ Determination	2. Sense of Hope/Growth/ Determination
3. Emotion	3. Emotion
4. In-session Emotion	4. In-session Emotion
5. Behavior	5. Behavior
6. Somatic Functioning	6. Somatic Functioning
7. Relationship Quality	7. Relationship Quality

2. **SENSE OF HOPE**

This captures the person's capacity to see the possibility of change in the future, to recognize recent positive changes, and to express a commitment or determination to make changes.

Negative: a feeling of being stuck, trapped, having no way out, sinking, feeling tired of trying, or a lack of commitment. Sometimes one can experience a giving up of old ways before change. Although this is hopelessness before change, it is still coded as negative hope

Examples:

- "I hate my life. I feel stuck. I can't see a way out." (NEGATIVE, HIGH)
- "There are times when I just get tired of fighting so hard." (NEGATIVE, LOW)

Low hopelessness does not mean hope.

Positive: a feeling of movement and possibility, commitment or determination to change

Examples:

- "I am realizing that I do have some control over my mood and fate." (POSITIVE, HIGH)
- "I have got to stop beating myself up. I must stop." (POSITIVE, HIGH)
- "I am beginning to think that there might be a way out of this mess." (POSITIVE, LOW)

COGNITIVE/EMOTIONAL PROCESSING:

This category captures the extent to which the person approaches a problem and explores, tries to understand, challenge, and make meaning of it. It can begin as thinking about and questioning a problem area or exposing oneself to new information, and then is followed by insight or shift in perspective or meaning. This does not simply involve following the therapist's interpretations. The ratings of low, medium, and high reflect **level** of processing rather than frequency or intensity. At medium and high levels, there are often emotional or behavioral manifestations of this shift in perspective or meaning.

0 = N/A	**No processing is apparent or slight movement toward thinking about or approaching a problem**
1 = low	**Exploring and questioning a problem area, but without a significant insight** *Examples:* ❖ "I began to wonder why I had stayed so long in this unhealthy relationship. What kept me there? What was I getting out of it?" ❖ "I wonder why I keep putting myself in bad situations." ❖ "I can't stop thinking about everything that I did to hurt him and how I have failed in relationships." (**NOTE: This is NOT cognitive/emotional processing** because it involves repetitive questioning that is not productive, it is coded as Unproductive Processing)
2 = medium	**Exploring and questioning a problem area with some new connections and insights, but no substantial perspective shifts** *Examples:* ❖ "I realized that I am afraid to succeed. I have been holding myself back because I am afraid to move too fast and then to fail." ❖ "I made myself go to three meetings this week, and my anxiety decreased a little bit. I'll keep working on my exposure exercises." ❖ "After talking about his death over and over with my therapist, it is beginning to be less painful."
3 = high	**Engaged and exploring or confronting a problem area with substantial insight and perspective shifts. This can include making new meaning of experience, integrating past experience with current functioning, benefit finding, reframing, reaching a higher level of abstraction, and resolution/acceptance.** *Examples:* ❖ "Then it hit me, I must stop running. I run and run so that I won't get hurt, but then I can't feel at all, and I am alone. I am exhausted. I want to feel again, connect with other people. " ❖ "I feel more solid. Bad things still come my way, but somehow I don't let things devastate me as I did before. I am starting to see that the bad things are not personal; they are part of being alive." ❖ "My mother was a jerk to me when I was younger, but I realize that she thought she was protecting me from living a life that she did. In doing so, she killed my spirit and made me afraid of my own shadow. Somehow by pushing it this far, something in me snapped. I finally protected and took care of myself."

Session #																											Session #
+ Self																											+ Self
- Self																											- Self
+ Hope																											+ Hope
- Hope																											+ Hope
+ Emotion																											+ Emotion
- Emotion																											- Emotion
+ In session Emotion																											+ In session Emotion
- In session Emotion																											- In session Emotion
+ Behavior																											+ Behavior
- Behavior																											- Behavior
+ Somatic																											+ Somatic
- Somatic																											- Somatic
+ Relationships																											+ Relationships
- Relationships																											- Relationships
Historical Antecedents																											Historical Antecedents
Protect/Avoid																											Protect/Avoid
Avoidance of task (0, 1)																											Avoidance of task (0, 1)
Cog./Emotional Processing																											Cog./Emotional Processing
Unproductive Processing																											Unproductive Processing

Client #: _____

Coder: _____ **Date:** _____

Appendix I

Collaborative Case-Conceptualisation Rating Scale and Coding Manual

Collaborative Case Conceptualization Rating Scale & Coding Manual

version 5 July 19, 2011

Christine A. Padesky, PhD
Center for Cognitive Therapy, Huntington Beach CA, USA
Willem Kuyken, PhD
University of Exeter, United Kingdom
Robert Dudley, PhD
Newcastle University, United Kingdom

Table of Contents

Collaborative Case Conceptualization Rating Scale Coding Manual

C.A. Padesky, W. Kuyken, & R. Dudley

Overview

This manual and its rating scale operationalize the model of case conceptualization developed by Kuyken, Padesky and Dudley (2009) in their book *Collaborative Case Conceptualization: Working Effectively with Clients in Cognitive Behavioral Therapy*. Its functions are to enable:

- Supervisors / consultants to provide formative feedback to therapists learning case conceptualization
- Researchers to evaluate if and how case conceptualization competency is related to therapy processes and outcomes
- Trainers and researchers to assess therapist conceptualization competence

The case conceptualization model is described fully in Kuyken, Padesky & Dudley (Kuyken, Padesky, & Dudley, 2009). This manual operationalizes the three principles articulated in the book as being fundamental to effective case conceptualization:

1. Levels of conceptualization
2. Collaborative empiricism
3. Strengths/resilience focus

The defining content of each of these principles is described so that raters can examine the presence / absence of these features and rate the extent to which competency in this area is demonstrated in a given therapy session. Collaborative empiricism is divided into its two sub-domains; collaboration and empiricism are each described and rated. The extent to which these principles are related or distinct was examined through the development process described below, including expert peer review as well as psychometric criteria of reliability and validity (Streiner & Norman, 1989; Campbell & Fiske, 1959).

Development process

This manual and its rating scale are designed to operationalize competency in CBT case conceptualizations as described in the book *Collaborative Case Conceptualization* (Kuyken, Padesky & Dudley, 2009). It's design is informed by prior research on case conceptualization, especially the Quality of CBT Case Conceptualization Scale (Kuyken, Fothergill, Musa, & Chadwick, 2005), the Case Formulation Content Coding Method (CFCCM) (Eells, Kendjelic, & Lucas, 1998) and the Conceptualization Rating Scale (Easden & Kazantzis, 2007). Our goal is to produce an assessment tool that can reliably and comprehensively rate the conceptualization process and skill of CBT therapists. Each version of this manual was developed by the authors of the model (Padesky, Kuyken, & Dudley) in collaboration with (a) researchers who evaluate the impact of case formulation on therapy processes and outcomes as well as (b) colleagues involved in training and rating CBT therapists.

Step 1. Describing the domains
The initial phase (March - August, 2010) established criteria to assess each principle or sub-domain of case conceptualization competency. The model's authors were instrumental in setting out these criteria. Peer review and input was received from experienced CBT practitioners, including Michael Easden, Sheena Liness, Freda McManus and Jacqueline Persons.

Step 2. Testing the face validity of the scaling
The face validity of the proposed approach to scaling competency in case conceptualization was evaluated (Sharpless & Barber, 2009) by the model's authors rating sample session recordings (August - October, 2010). This scale appeared to have good face validity based on the ease with which ratings could be made, the number of sessions falling into each category and raters' judgments about each item's ability to quantify competence in case conceptualization. Items were revised and combined based on raters' feedback. Ratings of additional session recordings led to articulations of fine grained differentiations in the descriptors provided for different levels of competence for different domains.

Step 3. Establish inter-rater reliability
An important criterion of interest is whether raters can agree in their differentiations of competency in case conceptualization, both overall and in relation to each domain and sub-domain. To establish the inter-rater reliability of the CCC-RS, intra-class correlations (ICC) were calculated for six session recordings coded independently by a pair of raters, one new to the scale, Phil Gower and one of the developers of the scale, Willem Kuyken (October, 2010). For the CCC-RS total score, ICC = .97 p = 0.001 and for the CCC-RS subscales the ICCs were: Levels of conceptualization ICC = .91, p = 0.01; collaboration ICC = .91, p = 0.01; empiricism ICC = .93, p = 0.006; strengths and resilience Focus ICC = .92 p = 0.009. Reliability of the global subscale fell in the substantial agreement range (ICC = .95, p = 0.003) as did all ICCs (0.81 - 1.0; Shrout, 1998), demonstrating that following appropriate training, high levels of inter-rater agreement can be established on the CCC-RS.

Step 4. Establish internal consistency and validity
Ongoing research is examining whether the CCC-RS actually assesses what it sets out to measure, by examining its convergent, discriminant and predictive validities. The first study was conducted by Philip Gower as his doctoral dissertation research under the supervision of Willem Kuyken (Gower, 2011). That research examined the CCC-RS, it's correlation with a measure of CBT competence, as well as its association with therapy outcomes.

The CCC-RS' internal consistency was computed from ratings of 40 session recordings. It showed high internal consistency for the full scale (Cronbach's α = .94) and each of the sub-scales; Cronbach's α for the levels of conceptualization, collaboration, empiricism and strengths / resilience focus subscales were .92, .89, .86, and .88 respectively. This suggests the scale has good internal consistency across items in its total and sub-scale structure.

The CCC-RS also showed good convergent validity with a general measure of CBT competence, the CTS-R (Blackburn et al., 2001; Milne, Claydon, Blackburn, James, & Sheldon, 2001). The CTS-R is a 12-item observer-rater scale widely used in the measurement of CBT therapist competence. There was a significant and positive relationship between competence in case conceptualization and therapists' overall CBT competence. Significant and positive correlations were also found between CBT competence and our four subscales on the CCC-RS: level of conceptualization,

collaboration, empiricism, and the therapists' focus on client's strengths/resilience. The CCC-RS scales expected to correlate highly with individual CTS-R items which most closely measure case conceptualization were also examined. Total score on the CCC-RS correlated significantly with the 'conceptual integration' item in the CTS-R ($r = .44$, $p = 0.002$). The CCC-RS collaborative conceptualization sub-scale correlated significantly with the general 'collaboration' in CBT Item in the CTS-R ($r = .44$, $p = 0.002$).

To examine whether competency in case conceptualization as measured on the CCC-RS is linked to therapy outcome, forty audiotapes selected from an ongoing study (CoBalT: Cognitive Behavioural Therapy as an adjunct to Pharmacotherapy for Treatment Resistant Depression in Primary Care: a randomised controlled trial) were rated for competency in case conceptualization using the CCC-RS. Ratings were made blind to treatment outcome. Therapy outcome was measured using The Beck Depression Inventory II (BDI-II; Beck, Steer & Brown, 1996).

Significant associations were found between all the CCC-RS scales (total score, levels of conceptualization, collaboration, empiricism, strengths / resilience focus) and change in BDI-II scores from baseline to end of treatment. Regression was used to find out whether competence in case conceptualization could predict therapy outcome. Due to high correlations among the subscales of the CCC-RS only the total score on the CCC-RS was used to predict outcome to minimize the risk of co-linearity. The regression suggested that therapists' competence in case conceptualization predicts variance in client outcomes (Gower, Kuyken, Padesky, Dudley & McManus, 2011).

While these initial research findings are encouraging, additional research is necessary to extend these findings to additional clinical populations and to further examine the validity and utility of the CCC-RS.

In July 2011 we decided to post this manual on the internet so other research groups could collaborate with us on further developments of this conceptualization rating scale (http://www.padesky.com/resouces).

Rater Guidelines

Principle 1. Levels of Conceptualization

Conceptualization changes over time depending on the phase of therapy (early, middle, late, booster sessions) and the function of conceptualization (e.g., socialization to the model, rationale for behavioral experiments, relapse prevention).

Initial conceptualizations are typically quite descriptive; therapists assess clients' presenting issues and help the client describe these issues in cognitive and behavioral terms (**Descriptive Level**). This early conceptualization activity is sometimes called "socialization" to CBT. Following initial descriptions of presenting issues, case conceptualizations become more explanatory, identifying triggers and maintenance factors using cognitive behavioral theory (**Cross-sectional Level**). Here disorder-specific models or generic approaches like functional analysis (e.g., Kohlenberg & Tsai, 1991) are typically used. In middle and later stages of CBT, conceptualization uses higher levels of inference to explain how predisposing and protective factors contribute to clients' presenting issues (**Longitudinal Level**). Predisposing factors help explain why a client is vulnerable to their presenting issues. Protective factors highlight strengths that can be used to build resilience as described in our third domain below. Clients' compensatory strategies, conditional assumptions, core beliefs and developmental history are typically drawn out into an account of their presenting issues understood through the lens of their developmental history.

Therapists exercise judgment in progressing through levels of conceptualization; gathering data, formulating descriptive hypotheses, inferential hypotheses and treatment plans in an iterative way (See, e.g., Eells, Lombart, Kendjelic, Turner, & Lucas, 2005). When done well, these decisions are made collaboratively and matched to client needs. For example, early in therapy and/or with a client who feels overwhelmed, the therapist is likely to use simpler and descriptive levels of conceptualization to match client needs and ability to accommodate new information. A cross-sectional level of conceptualization is used when the client wants to understand why patterns of thinking or behaving are pervasive and/or persistent. When the client's developmental history and protective/predisposing factors seem relevant to the therapy goals, client and therapist co-develop a longitudinal conceptualization.

There is a seamless movement through levels of conceptualization across therapy. It is not necessary to use all three levels of conceptualization with each client. It is more important to assess whether the most helpful level(s) of conceptualization are used at each stage of therapy and that the conceptualization evolves as therapy proceeds.

When rating, keep in mind that each of the three levels of conceptualization can be usefully employed at any point across the span of therapy. Descriptive case conceptualization may be done late in therapy if a new issue is discussed. Some issues (such as anxiety disorders) lend themselves to cross-sectional case conceptualizations of triggers and maintenance factors as soon as a diagnosis has been made. A client presenting with post-traumatic stress symptoms dating from early abuse experiences may well require some exploration of early developmental experiences and this may lead to the beginnings of a longitudinal case conceptualization early in the course of therapy. However, the beginnings of a longitudinal case conceptualization will still have a present-focus and will primarily work through levels of description and maintenance with the goal of alleviating client's distress towards early therapy goals.

For an in depth description of "levels of conceptualization," see Kuyken, Padesky & Dudley (2009), pp. 29-44. A detailed case example is provided on pp. 121-247.

Key features

At all three levels of conceptualization look for the therapist to:

- Identify and link behaviors, cognitions (automatic thoughts, underlying assumptions and core beliefs), emotions, and physiological experiences with particular situations and experiences in ways that are a "good fit" to client experience
- Infer the elements above appropriately from what the client reports
- Use accessible and appropriate language, metaphors, stories and imagery in the case conceptualization
- When the therapist does case conceptualization well, it usually helps the client better understand his/her problems

In addition, at the Descriptive Level the therapist will ideally:

- Differentiate thoughts, moods, physical reactions, behaviors, and situational aspects of client experience
- Explain the rationale for a CBT-based description of presenting issues
- Demonstrate understanding of the principles and processes of common descriptive case conceptualization models (e.g. Beck's generic model, Padesky & Mooney's (1990) 5-part model, functional analysis, or other individualized methods)
- Draw on appropriate theoretical models (e.g., OCD) to gather the most relevant information related to a presenting issue

At the Cross-sectional Level:

- Identify triggers, responses and maintenance cycles
- Recognize key trans-diagnostic processes such as rumination, avoidance and safety behaviors
- Recognize and incorporate recurrent themes across situations in the client's life where the presenting issue occurs
- Use the conceptualization and treatment choices in an iterative way

At the Longitudinal Level, therapist is expected to:

- Demonstrate awareness of CBT theories of personality development (e.g. Beck et al, 2004)
- Gather only developmental information that is relevant, linked to presenting issues and goals, beliefs and/or behaviors
- Recognize and attend to evidence of client resilience
- Communicate the rationale for linking developmental history, presenting issues, relapse management, and resilience
- Infer relevant developmental information from client data and integrate it well into the case conceptualization

Principle 2. Collaborative Empiricism

Sub-domain: Collaboration

Collaboration refers to processes that ensure the therapist and client work as interactive partners in therapy. In CBT, therapist and client are expected to work as a team to achieve client goals. Collaboration is enhanced when there is genuine curiosity and respect for each others' ideas. There are several rationales for collaborative co-construction of the case conceptualization:

- Client involvement enhances client understanding of the presenting issues as well as the treatment rationale. Greater understanding and participation in case conceptualization and treatment planning may increase therapy motivation.
- Therapist and client typically each hold only part of the information necessary for a useful conceptualization. The therapist is often knowledgeable about psychological theory and evidence-based models of client issues. At the same time, the client knows the relevant information about his or her own personal experiences and circumstances that give rise to the presenting issues.
- The synthesis of therapist and client information is the best way to reduce cognitive biases that can distort the conceptualization if done by either the therapist or client on their own. The relevance of client personal experiences and broad psychological findings can be weighed and balanced through collaborative discussions, observations, and experiments.

For an in depth description of "collaboration" in case conceptualization, see Kuyken, Padesky & Dudley (2009), pp. 52-54; 61 - 68.

Key features

Collaboration describes both therapist and client behaviors (often directly observable) and also a spirit of engagement and involvement (which may need to be inferred from nonverbal cues or facial expressions).

Examples of COLLABORATIVE BEHAVIORS include:

- Both parties writing on or pointing to the model
- Questions followed by a silence that suggests the answers are truly important and of interest
- Therapist prompts such as, "How would you say that in your own words?"
- Client questions such as, "What do you think?" (after offering an idea)
- Both parties speaking often, but based on active listening, constructively and without speaking over each other
- Evidence that each is listening to the other (e.g., use of a common language; images and metaphors used by one person are picked up by the other)
- In session experiments, followed by mutual discussion

Examples of a COLLABORATIVE SPIRIT include:

- Facial expressions that demonstrate a keen interest in discussions and the other person
- Eye contact that appears lively and engaged
- Vocal tones that express a high degree of interest, at times enthusiasm
- Willingness to change the conceptualization based on ideas or observations offered by the other person

Sub-domain: Empiricism

Empiricism refers to: (i) making use of relevant CBT theory and research in conceptualizations and (ii) using an empirical approach in therapy which is based on observation, evaluation of experience, and learning. At the heart of empiricism is a commitment to using the best available theory and research in case conceptualization. Given the substantial evidence base for many disorder-specific CBT approaches we argue that with many clients a relatively straightforward mapping of client experience and theory may be possible. For example a person presenting with panic attacks in the absence of other issues can normally benefit greatly from jointly mapping these panic experiences onto validated CBT models of panic disorder (Craske & Barlow, 2001; Clark, 1986).

Of course, therapists also face situations where there is little or only emerging evidence for CBT. Also, clients can experience multiple or more complex presenting issues that make it difficult to map directly to one particular theory and still provide a coherent and comprehensive conceptualization that is acceptable to the client. Under these circumstances, a generic or trans-diagnostic approach may be an appropriate choice.

Even when a disorder specific CBT model is closely matched to a client's presenting issues it is important to develop the case conceptualization with the client, so the client understands the applicability of the model to his or her own experiences. This entails gathering detailed information about client experiences (thoughts, emotions, behaviors, physiological reactions, and circumstances) and purposefully comparing these to the emerging conceptualization. Empiricism also involves an active search for examples that do not fit with the emergent model, experiences which might challenge its utility.

Another face of empiricism is that the therapist takes an empirical approach to clinical decision-making. Therapists and clients develop hypotheses, devise adequate tests for these hypotheses, and then adapt these hypotheses based on outcomes of therapy interventions. This makes CBT an active and dynamic process, in which the conceptualization both guides treatment and is corrected by feedback from the results of active observations, experimentation and intervention.

For an in depth description of "empiricism" in case conceptualization, see Kuyken, Padesky & Dudley (2009), pp. 44-51; 68 - 83.

Key features

Conceptualization that is empirical will include evidence of the following:

- Use of the best available CBT theories and models to inform the conceptualization
- Comparison of the conceptual model with client observations and experiences
- Individualization of the conceptualization to tailor it to this particular client
- An active search / inquiries regarding client experiences that do not fit the model
- Understandable links between the conceptualization and treatment plan
- Modification of the conceptual model and / or treatment plan when unexpected outcomes occur in session, during homework, or during naturalistic life events

Principle 3. Strengths / Resilience Focus

Most current CBT approaches are concerned either exclusively or largely with a client's problems, vulnerabilities and history of adversity. We advocate therapists identify and work with client strengths at every stage of conceptualization. According to our case conceptualization model, a strengths-focused approach helps achieve the two primary purposes of CBT: alleviation of client distress and building client resilience (Kuyken, Padesky & Dudley, 2009, p. 3). A strengths focus is often more engaging for clients and offers the advantages of harnessing client resilience during the change process to pave a way toward lasting recovery. Identifying and working with clients' strengths and resiliency begins at assessment and continues at each level of conceptualization.

Client strengths come in many forms. Common areas therapists can consider include: specific skills (such as musical ability or knowledge of engine repair), beliefs (*If I stick with something, I will be able to get through it)*, hobbies or passionate interests (football, gardening), personal values (*love* or *loyalty* toward others*)*, character assets (honesty, kindness), physical or mental abilities (intelligence, endurance, good health), social supports (friends, family, colleagues), spirituality (belief in God and/or meaningful values) and emotional assets (ability to self-soothe, delay gratification).

Often these strengths are "hidden" in the sense that the client may not recognize his or her strengths and does not directly describe them. For example, a mother who says, "I struggle to feed and clothe my children on my disability income," is conveying both a problem and a myriad of hidden strengths. Her statement implies she is somehow managing most of the time to feed and clothe her children on a very small sum of money. This suggests she could have hidden strengths in the areas of creativity, budgeting, delay of gratification, meal planning, and even humor.

Therapists with a strengths focus will:

(i) **recognize hidden strengths**

(ii) **bring these strengths into client awareness through questions** (e.g., *How DO you manage to feed and clothe your children on such a limited income?*) **and strengths-focused summaries** (e.g., *It sounds like you know how to stretch a budget by being a creative cook and seamstress. It also helps that your children know you are a loving mother and you are able to enlist their cooperation even when the family needs to delay things you all would like*)

(iii) **incorporate strengths into case conceptualization and treatment planning** (*Where do you think we could put your strengths we just identified on this model we are using to understand [your presenting issue]? Can you think of any ways you might use these strengths to help with this issue?)*

Resilience is the ability to bounce back in the face of adversity. Resilience is closely linked to strengths because people often draw on their strengths in challenging times in order to adapt and thrive (Rutter, 1999). There are many paths to resilience and even people with just a few strengths can use these as a springboard to greater resilience. A resilience focus in therapy asks client and therapist to consider how this client's particular strengths can help the client adapt to life challenges. Resilience-based strategies can be incorporated into the conceptualization of a presenting issue.

Just as presenting issues are conceptualized, therapists and clients can develop conceptualizations of resilience. These can describe and link resilient behaviors, cognitions, emotions, physical responses (descriptive conceptualization). Or they might show how strengths protect the person from adverse events that might otherwise trigger and maintain presenting issues (cross-sectional conceptualization). A

longitudinal conceptualization of resilience can summarize how strengths have operated across a lifetime to foster resilience and promote well-being. Because resilience is a broad multi-dimensional concept, therapists can inform these conceptualization models of resilience by drawing from a large array of theoretical ideas in positive psychology (See e.g., Snyder & Lopez, 2005).

For an in depth description of a strengths and resilience focus in case conceptualization, see Kuyken, Padesky & Dudley (2009), pp. 93 - 120.

Key features

Therapists who conceptualize with a strength and resilience focus are likely to:

- Express as much interest in strengths as difficulties (e.g., *we've been talking about difficult issues in your life. What are some of the things you enjoy or that bring you a sense of accomplishment?)*
- Use guided discovery to draw out hidden strengths
- Highlight what the client is doing well to enhance client self-efficacy and resilience
- Incorporate strengths into case conceptualizations
- Consider with the client how current strengths and resilience can help foster desired change and progress toward client goals
- Use language that communicates hope and the possibility of change.

References

Blackburn, I.-M., James, I. A., Milne, D. L., Baker, C., Standart, S., Garland, A. et al. (2001). The revised cognitive therapy scale (CTS-R): psychometric properties. *Behavioural and Cognitive Psychotherapy, 29*, 431-446.

Campbell, D. T. & Fiske, D. W. (1959). Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix. *Psychological Bulletin, 56*, 81-105.

Clark, D. M. (1986). A cognitive approach to panic. *Behaviour Research and Therapy, 24*, 461-470.

Craske, M. G. & Barlow, D. H. (2001). Panic disorder and agoraphobia. In D.H.Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual*. (3rd edition. ed., pp. 1-59). New York: Wiley.

Eells, T. D., Kendjelic, E. M., & Lucas, C. P. (1998). What's in a case formulation? Development and use of a content coding manual. *Journal of Psychotherapy Practice and Research, 7*, 144-153.

Eells, T. D., Lombart, K. G., Kendjelic, E. M., Turner, L. C., & Lucas, C. P. (2005). The quality of psychotherapy case formulations: A comparison of expert, experienced, and novice cognitive-behavioral and psychodynamic therapists. *Journal of Consulting and Clinical Psychology, 73*, 579-589.

Gower, P. (2011) *Therapist competence, case conceptualisation and therapy outcome in cognitive behavioural therapy*. (Unpublished doctoral dissertation). University of Exeter, Exeter, UK.

Gower, P., Kuyken, W., Padesky, C.A., Dudley, R., McManus, F. (2011). Collaborative case conceptualization is associated with better treatment outcomes. Manuscript submitted for publication.

Kuyken, W., Fothergill, C. D., Musa, M., & Chadwick, P. (2005). The reliability and quality of cognitive case formulation. *Behaviour Research and Therapy, 43*, 1187-1201.

Kuyken, W., Padesky, C. A., & Dudley, R. (2009). *Collaborative case conceptualization: Working effectively with clients in cognitive-behavioral therapy*. New York: Guilford.

Milne, D., Claydon, A., Blackburn, I. M., James, I. A., & Sheldon, H. (2001). Rationale for a new measure of competence in therapy. *Behavioural and Cognitive Psychotherapy, 29*, 21-33.

Sharpless, B. A. & Barber, J. P. (2009). A conceptual and empirical review of the meaning, measurement, development, and teaching of intervention competence in clinical psychology. *Clinical Psychology Review, 29*, 47-56.

Shrout, P.E. (1998). Measurement reliability and agreement in psychiatry. *Statistical Methods in Medical Research, 7*, 301-317.

Snyder, C. R. & Lopez, S. J. (2005). *Handbook of Positive Psychology*. New York: Oxford University Press.

Streiner, D. L. & Norman, G. R. (1989). *Health measurement scales: A practical guide to their development and use*. Oxford: Oxford University Press.

Collaborative Case Conceptualization Rating Scale

Rate each item below on a 0 - 3 scale. Sample criteria are provided.
Use the rating most closely matched to therapist performance.

LEVELS OF CONCEPTUALIZATION (see guidelines pp. 4-5)

1. **_____Conceptualization is linked to client presenting issues, priorities, and goals for therapy in the context of the session agenda,**

   0 = Conceptualization activity is either completely absent or seems divorced from the agreed goals of therapy, the agreed day's therapy agenda and/or therapeutic agenda.

   1 = Conceptualization is tenuously linked to the client's presenting issues, priorities and goals for therapy and the day's therapy agenda, or has to be inferred from the therapist's behavior.

   2 = There is a good enough and explicit linking between conceptualization, client presenting issues, priorities and goals for therapy and the day's therapy agenda.

   3 = There is a seamless integration between the agreed goals of therapy, the day's therapy agenda, therapeutic goals and the conceptualization. The conceptualization is a key part of the client moving towards his/her goals for therapy and/or for a particular session as evidenced by links drawn by the client and/or therapist.

   TIP: To receive a rating greater than zero, the conceptualization must be explicitly shared with the client. The client's involvement and reaction to in session conceptualization activity provides clues about how well it is woven in with client's priorities / goals. Only assign a higher score if the conceptualization is effective. Client acceptance and willingness to use the conceptualization might be a part of this. The sense that conceptualization activity moves the session through agenda items and towards client goals is another indicator. E.g., Therapist: *Are you willing to test this rule, "if I say hello to other parents at the school gates, they will ignore me";* Client: *I can see that it makes sense for me to at least try to get to know the other parents, even though it's scary.*)

2. **_____Therapist provides a clear explanation and rationale for the elements included in the conceptualization**

   0 = Therapist provides either no rationale or an incorrect or incomprehensible explanation for elements of the conceptualization. The therapist's conceptualization activity lacks a clear/compelling therapeutic rationale or if s/he has a therapeutic rationale there is no evidence that the client understands or agrees with this rationale.

   1 = Therapist provides some rationale for elements included in the conceptualization, but this may be incomplete, incorrect in important respects, or is presented in a way that is difficult for the client to comprehend. Nonetheless, there is some evidence of beginner or novice level competency in providing a rationale for the conceptualization process overall, and an explanation of the elements within it.

2 = Therapist provides a clear rationale for the elements of the conceptualization (e.g., *so in this upsetting situation, let's see if we can separate your feelings from your thoughts and images and see how these might be connected.).* It is possible to observe or clearly infer the therapist's therapeutic rationale for conceptualization activity (e.g., *Learning to notice and respond to upsetting images can help you understand your reactions and cope with them.)* Client seems to understand the rationale or, if confused, the therapist works to ensure client understanding.

3 = Therapist provides clear rationales for elements included in conceptualization and uses client language, metaphor, imagery and/or other vehicles to aid client understanding and engagement. There is evidence that the client is fully on board and engaged with the conceptualization activity (as much as is possible given client presentation). The therapist checks client understanding of the rationale either directly (e.g., by asking the client to summarize) or indirectly (e.g., by asking the client to make inferences or predictions from the model). Alternatively, the therapist is able to elicit a clear rationale / understanding from the client regarding pertinent and specific thoughts, emotions, behaviors, underlying beliefs and copings strategies related to their conceptualization

TIP: The therapist's behavior must be observable (not inferred). Observe client's reactions to see if what the therapist says is understood. If so, the client is likely to appear interested rather than lost.

3. _____**Coherent, meaningful and relevant account of presenting issues using a level of conceptualization that appears well-matched to the client's ability to understand, stage of therapy, and the issue being conceptualized. The therapist uses cognitive-behavioral models or approaches appropriate to the stage of therapy and issue conceptualized. Beliefs, emotions, behaviors and/or physical responses are linked, embedded in specific situations and a "good fit."**

0 = Therapist either: (i) misses all opportunities for conceptualization, or (ii) the conceptualization does not fit what the client is saying, (iii) it is so poorly linked with the client's concerns that it is meaningless, incoherent and/or unhelpful to therapy, or (iv) the conceptualization is assumed or left implicit. Alternatively, the client presents his or her own conceptualization which is unhelpful and, even though it is inconsistent with data, the therapist works with this client model without any question.

1 = Conceptualization shows minimal integration of the elements into a coherent whole or key models appropriate to the client's presentation are not used or are misapplied. The conceptualization is a basic summary of the presenting issues and includes irrelevant information on an equal basis with relevant information.

2 = Conceptualization effectively links cognitions, emotions, behaviors and/or physical responses in a way that is **coherent and meaningful** to understanding the client's concerns and moving towards the client's goals. The therapist selects an appropriate model-specific, descriptive, cross-sectional and/or longitudinal conceptualization that is driven by the client's level of understanding, the stage of therapy and the issue that is being discussed. However, there is a sense that this could have been done either more simply or directly.

3 = The conceptualization is a meaningful and coherent account of the presenting issue(s), with a seamless integration of emotions, beliefs, behaviours and/or developmental context. All the information in the conceptualization is relevant and drawn from client experience; it may build on earlier work. Therapist demonstrates excellent judgment in selecting the appropriate level of conceptualization model in the context of client's ability to understand, stage of therapy, and issue being conceptualized as evidenced by client understanding of what is discussed.

TIP: Raters must use their knowledge of CBT to judge whether a conceptualization is well-matched to the stage of therapy, and the issue being conceptualized. For example in CBT for depression, as therapy proceeds the conceptualization may move from simpler cognitive and behavioral conceptualizations aimed at socialization and engagement, to understanding negative automatic thoughts, to conditional assumptions and deeper level unconditional core beliefs. The client's engagement with conceptualization, non-verbal communication or own summary of the session (if elicited) will provide good evidence. In some cases progression through levels may be evident within a session (e.g., in working with some anxiety disorders it may be possible to move through both descriptive and cross-sectional maintenance models within the same early session). It is not necessary to use a custom-made conceptualization model - the choice of how to conceptualize with clients is determined more by the client's ability to understand, stage of therapy, and the issue being conceptualized.

4. **_____The conceptualization is as simple as possible given the stage of therapy. There is evidence that the parsimony in the conceptualization helps the client understand his/her presenting issue(s) and use the conceptualization to effect change**

0 = Conceptualization is either so complex that it is incomprehensible to the client at this point in therapy or so simple as to be vacuous.

1 = Therapist attempts to distil conceptualizations, but there is nevertheless more information than is essential to enable client understanding or so simple that information that is key to a descriptive / explanatory account is missing.

2 = Conceptualization is as simple as possible given the data available at a given time in therapy and, at the same time, captures the most central elements.

3 = The conceptualization conveys complex ideas concisely, distilling information into the essential parts necessary to describe or explain what is needed at this stage of therapy for this client. The therapist is highly attuned to what will help the client make sense of his/her presenting issues in as simple a form as possible. S/he may use well chosen metaphors, images or stories that are simple but rich in meaning to enable client understanding. While s/he may hold a complex conceptualization, in the session this is distilled into a simple and functional conceptualization.

TIP: The client's engagement and reactions suggest whether the therapist has pitched the simplicity about right. If too simplistic, there may be evidence the client feels patronized and is switching off. If the conceptualization is too complex there may be evidence the client does not understand, feels overwhelmed or is humoring the therapist. Therapists must assess each client's needs. What is simplistic and obvious to one may take another client several sessions to assimilate. Therapists adapt to the needs of each client. The client's summary of the session also provides clues about what they have understood from the session.

COLLABORATION (see guidelines p. 6)

5. _____**Conceptualization is collaboratively developed. The client is actively engaged: generates ideas, writes things down or directs the therapist what to write down, and answers questions rather than being told the details by therapist. Client and therapist ideas are equally valued in figuring out conceptualization.**

   0 = Client or therapist is a passive observer or recipient of the conceptualization. The therapist does nothing to engage the client's participation in its development or discounts client ideas. Therapist ignores differences in opinions or insists the therapist's point of view is the correct one. Alternatively, a very passive therapist who lets client drive the agenda including conceptualization (e.g., *"My depression is entirely chemical"* is accepted without discussion).

   1 = While both contribute to the conceptualization, there is an obvious imbalance. The therapist may do most of the work and only ask for client agreement or ignore/omit relevant client ideas. Differing views are ignored, misunderstood, or left out, without resolution of differing perspectives. It appears the therapist is guiding the conceptualization to a therapist-determined content and/or structure. Client seems mildly interested in the conceptualization and participates occasionally but mostly sits back and lets the therapist do the work. The therapist accepts the lead role. Alternatively there is evidence of a client dictating the session and the therapist does not manage the situation well enough to bring in appropriate conceptualization activity.

   2 = Both therapist and client are actively involved in conceptualization; each one's ideas are incorporated in a meaningful way. Therapist seeks and attends to client's ideas. Differences of opinion are welcomed; both client experiences and relevant theories and research are used to resolve these. Even if the conceptualization is model-driven, the therapist engages client in its construction so that, from the client point of view, this is a co-created model drawn from the client's experience.

   3 = Therapist and client are highly interactive and co-create the conceptualization; ideas are added or deleted from the conceptualization based on mutual agreement. The therapist recognizes elements from evidenced-based models in the client's experience and incorporates these into the conceptualization using the client's own words, so the conceptualization appears highly individualized, even if fairly standard in content. Differences in opinion are actively welcomed and discussed. Client is highly engaged in the conceptualization and offers ideas even when not asked -- actively interacting with the therapist throughout the conceptualization process.

   TIP: Observations of the client and therapist during conceptualization provide important information for this item. Do both appear active and interested? Is there a balance in contributions? Is there evidence of mutual respect and interest in each others' ideas? Ideally, the client seems interested in the conceptualization and shows nonverbal signs of engagement (looking closely at the paper or whiteboard, pointing to the conceptualization during discussions) and offers frequent verbal input, questions, and/or suggested modifications.

6. **_____Relevant cultural aspects of client's experience are incorporated and/or conceptualizations use language, metaphors, and images individualized to this client.**

   0 = Client language, metaphors and images are ignored and/or therapist uses language for the conceptualization that is mismatched to this client by its nature, complexity (or lack thereof) or content. Even when relevant cultural references are made in the session (e.g., "boys in my family did not admit to having feelings"), the therapist neglects to include these in the conceptualization.

   1 = Therapist uses client language, metaphors and images and also misses important opportunities to do so. Alternatively, therapist changes client language in ways that make it less the client's own. Obvious aspects of culture are either not considered or left out. The therapist may inquire about culture in a way that is insensitive to the client's cultural frame of reference (e.g. "*Is this something about your Hindu faith?*" when the client is discussing idiosyncratic gender roles in her family of origin).

   2 = Therapist incorporates client language and also appropriate client images and metaphors in the conceptualization. The therapist asks the client to state ideas in his/her own words to ensure client language is captured. When discussed, client cultural experiences are incorporated in ways that help make the conceptualization more useful or personalized. Therapist inquiries or client comments draw out aspects of the client's culture that have particular relevance for the conceptualization. The final conceptualization is in language easily understandable to this client.

   3 = Therapist is extremely adept; not only is client language favored, but the therapist accurately detects and uses a nuanced understanding of client phrases and imagery to make the conceptualization a custom fit. Relevant aspects of client culture are centrally incorporated into the conceptualization so these are not "added on" but are a seamless part of the fabric of the conceptual model developed. The therapist is sensitive to the multiple cultural dimensions of conceptualization (e.g., ethnicity, gender, age cohort, sexual orientation, spirituality, etc.)

   TIP: Cultural context is broadly defined, and includes the client's social background, economic background, ethnicity, age cohort, sexual orientation, religious background, spirituality and other relevant cultural factors. Whether the client's culture appears similar or different from the therapist's, the therapist is expected to inquire about cultural factors and use client language, imagery and metaphors in the conceptualization. Client culture may not be explicitly discussed in every session; pay attention to the language used to see if therapist and client use similar, culturally sensitive language (e.g., sports metaphors with an athletic adolescent girl). If so, this may signal culture has previously been explored and is integrated into the discussion.

7. **_____The therapist demonstrates a genuine curiosity and interest in understanding and seeing experience through the client's eyes. Socratic methods are used as appropriate (balance is Socratic more than didactic).**

   0 = Therapist does not express any curiosity or interest in the client's view of experiences. Therapist may speak over, contradict the client, or even insist that the client's report cannot be accurate. Either no use of Socratic methods or these are misused to pressure the client to say what the therapist wants.

   1 = Therapist seems interested in the client's view of experience but only in a narrow or limited way. The therapist may appear a bit off balance when the client's report does not match therapist expectations. Or the therapist may ask about client experiences and then interrupt the client or inaccurately summarize what the client says. While Socratic methods are used at times, the conceptualization is mostly presented in a didactic fashion. Therapist may neglect to listen, summarize, or ask the client how ideas fit together.

   2 = Therapist displays curiosity with eye contact, nonverbal and verbal expressions of interest, and follow-up questions and comments which suggest a genuine desire to accurately understand what the client is saying. When the client hesitates or is unsure about something, the therapist makes encouraging remarks and allows time for the client to figure things out. Therapist uses Socratic methods appropriately to help construct the conceptualization (asks questions with curiosity, listens empathically, ensures written summaries, and asks the client to fit ideas together). When didactic methods are more appropriate, the therapist pays close attention to client understanding and encourages interaction and inquiry.

   3 = Therapist expresses a high degree of curiosity, interest, and ***detailed*** questions to ensure s/he understands the client's perspective fully. Questions and silences are well-timed to help the client elaborate his/her perspective. Emerging understandings are examined (*Let me see if I have this right…. Am I missing anything?*). Therapist comments and questions go beyond mere reflection and demonstrate ***active efforts to see things from the client's view*** (e.g., *If I thought …., then I might be inclined to…. What is that like for you?)* The therapist ***welcomes novel responses*** from the client as eagerly as more typical replies. (Those phrases marked in bold italics typically differentiate a score of 2 and 3 on this item.)

   TIP: When skillfully used, Socratic methods help the client take ownership of the conceptualization even when it is drawn from an evidence-based model. Didactic methods can be interwoven with Socratic inquiry to create a shared sense of discovery. This item can be scored when therapists show genuine curiosity even if a more fully formed conceptualization is not developed in this session.

EMPIRICISM (see guidelines p. 7)

8. _____**The conceptualization reflects the most appropriate evidence-based theories. If a good evidence-based model exists, the therapist uses that issue-specific model. If no specific model exists, the therapist uses the most appropriate generic CBT model. A trans-diagnostic model may be used with co-morbidity. In each case, the choice can be justified given the nature of the presenting issue and the ability of the client to understand and relate the model to his or her experience. Where the focus is on resilience, an appropriate model is selected (e.g. Fredrickson's broaden and build model)**

   0 = Therapist does not utilize a model at all. Alternatively, the evidence-based models referenced are clearly inappropriate or presented inaccurately.

   1 = Therapist attempts to utilize a CBT model, however there are significant difficulties in the selection and use of the chosen model. The therapist may struggle to link the model and the client's presenting issues. Or key information from the client's experience is neglected or forced to fit a model that is not the best match. Alternatively the model is used in a limited or partial way that misses opportunities for it to fully match clients' presentation and inform interventions.

   2 = The therapist competently introduces and/or employs a model well-matched to the client's presenting issues. If an evidenced-based model exists, the therapist uses it. If a generic CBT model is used, it is used to its full potential. Client's reported experiences are readily compatible with its key features and the client seems to understand the model developed and find it helpful.

   3 = The therapist seamlessly introduces and/or employs the most appropriate model (evidence-based, if possible) for the client's presenting issues. The model is well matched to the client's unique experiences. The therapist utilizes the model to identify and highlight key processes identified in the model that are consistent with the client's own personal experience.

   TIP: Effective use of a model will quickly establish that there is a close match between it and the client's presenting issues. This fosters client confidence that the therapist understands the presenting issue(s) and can help.

9. _____**The conceptualization is based on specific client experiences and is *individualized* to fit this client based on appropriate data, inferences and testing. Therapist and client test the "fit" between the conceptualization and client experience. Therapist uses conceptualization to make predictions and/or test hypotheses; Socratic approaches are used (e.g., testing out hypotheses in session, setting up and debriefing behavioral experiments). The therapist recognizes and explores aspects of client experiences that do or do not fit with conceptualization and encourages the client to notice and describe experiences that are consistent or inconsistent with the conceptualization (in session and/or as homework).**

   0 = Therapist does not elicit client's specific experience. There is no attempt to link specific client experiences to the conceptualization. Once a model is chosen, there is no test for "fit." Therapist does not use the conceptualization

to make predictions or test hypotheses within or between sessions. Spontaneously reported examples of how the model does or does not "fit" client experience are ignored. Examples recorded in homework are also overlooked.

1 = Therapist attempts to personalize a model, but does not fully incorporate person specific information. The therapist may omit relevant experiences reported by the client or may use an example that is not representative of his/her presenting issue. Therapist and client seldom reference the conceptualization and **there are few attempts to make predictions based on the model**. In session tests or experiments regarding the conceptualization are limited or may be conducted in a didactic rather than experimental or Socratic fashion. Although some mismatches may be noted, other discrepant client experiences are missed, explained away or discounted.

2 = Client experiences are woven into a person specific formulation. Effort is taken to inquire about elements of the model (thoughts, feelings, behaviors) allowing a careful mapping of experience onto a model and the use of Socratic methods. Client's own words are used most of the time. If an "off the shelf" conceptualization is used as a starting point, an effort is made to map this onto client experiences. The need to test and check the adequacy of the formulation is explained in an open-minded manner, demonstrating to the client that the emerging conceptualization is a "work in progress" that needs to be actively tested against real experience. The results of such efforts are reviewed to consider if this reveals any limitations in the conceptualization.

3 = Client experiences are the starting point in this process and are seamlessly mapped onto a model from an apparently free flowing conversation. Whenever possible, client's own words, metaphors, and cultural references are chosen to increase "fit." Therapist openly tests the conceptualization by seeking counter examples or exceptions to the rule. Therapist is alert to notice when client experience is consistent or inconsistent with the conceptualization. Such client experiences are explored to reinforce, refine and revise the conceptualization. Therapist and client compare the model to present and past experiences. Changes are made to the conceptualization based on client feedback. The therapist is adept at maximizing the learning regarding hypotheses tested. What can distinguish a score of 2 and 3 is the extent to which the therapist ***very explicitly*** uses clients' experiences and the model to inform one another.

TIP: In an effective individualized conceptualization, client experiences rather than the model will determine the overall completeness of the formulation; the result may omit or add elements outlined in a standard model without sacrificing a complete understanding of the experience. Individualized conceptualizations offer an accurate and rich understanding that often enhances the therapist's genuine empathy toward the client. If this process is done particularly proficiently the therapist spends equal time on examples that do and do not fit the conceptualization. The client is encouraged to actively seek disconfirming examples in the spirit of discovering whether the emerging conceptualization is sufficiently robust to guide understanding and intervention selection. Supporting data and discrepancies are actively discussed in ways that convey both are welcome. Discrepancies are not viewed as a threat to the therapist's status or the therapy but rather as useful information to ensure the best and most helpful understanding of client issues.

10. _____Treatment planning is linked to the conceptualization. When appropriate, intervention results are reviewed in light of the conceptualization.

0 = Therapist does not make reference to the conceptualization when considering treatment options. Expected and unexpected treatment outcomes are not examined in relationship to the conceptualization.

1 = Therapist selects one or a number of tasks that are related to processes identified in the conceptualization but there is little consideration of "key" processes that may be maintaining the distress. Results of interventions are seldom considered in relation to the conceptualization.

2 = Therapist and client select key or lynchpin processes in the conceptualization (if an evidence-based model applies) or those that appear to maintain or predispose the client to difficulties. Chosen interventions are clearly appropriate and closely linked to these identified processes and fit well with treatment goals. Intervention results are carefully considered in relation to the conceptualization

3 = In addition to the qualities included in a "2" rating, interventions chosen are efficient (in light of evidence-based treatments that apply) and most likely to create new learning and desired changes at the appropriate level of conceptualization (descriptive, cross-sectional, longitudinal). Intervention outcomes are closely considered in light of the conceptualization; revisions or changes to the intervention are guided by the conceptualization.

TIP: If a range of interventions are considered look for them all to be clearly appropriate to client issues and closely linked to key processes in the conceptualization and not reflect a scattergun approach. More expert therapists will pay particular attention to client experiences and treatment outcomes that do not fit with predictions of the conceptualization; these unexpected outcomes are used to revisit and revise the conceptualization and/or treatment plan.

STRENGTHS & RESILIENCE FOCUS (see guidelines pp. 8-9)

11. **_____Therapist is interested in client strengths and uses guided discovery to draw these out. This includes identification of "hidden" strengths which the therapist brings into client awareness (e.g., "I notice you do many things to protect your friends. Let's make a list of what you do and see how these strategies might help with this issue.")**

    0 = Client strengths are absent from the discussion. Obvious client strengths are ignored. If the client mentions strengths or positive interests, the therapist steers the conversation back to a problem focus.

    1 = Inquiries are made about client strengths. These are either not successful (e.g., client denies strengths and therapist drops the line of inquiry) or the therapist misses opportunities to tie strengths to session topics or the therapist asks about strengths and then drops the discussion. Obvious hidden strengths are missed by the therapist.

    2 = Client strengths are identified and linked in a meaningful way to session topics. Therapist seems to recognize client hidden strengths and makes efforts to bring these to client awareness. If the client talks about positive personal activities the therapist asks questions and demonstrates interest. If a client denies strengths or positive interests, the therapist continues to ask questions and explore avenues in which strengths might be identified.

    3 = Therapist identifies, highlights, and incorporates client strengths *consistently and effectively*. Therapist artfully uses guided discovery to help client recognize obvious and hidden strengths. Client strengths and positive experiences are referred to in the context of discussions of problems; there is an integration of these differing aspects of the client's life.

    TIP: When rating this item it can be helpful to ask yourself, "Do I have a good sense of this client's strengths?" Strengths can include many aspects of the client's life (hobbies, spiritual beliefs, character virtues, skills, values). Look for the therapist to be alert to these varied strengths and explore them. The client often shows a positive shift in mood when strengths are discussed.

12. **_____The working case conceptualization includes client strengths. Strengths inform the treatment plan. (Note: Item 13 refers to identification and interest in strengths. This item assesses how well these strengths are incorporated into the case conceptualization and treatment plan.)**

    0 = Strengths are not explicitly included in the case conceptualization or treatment plan. Therapist may miss opportunities to draw on client strengths or positive interests in assigning homework.

    1 = Strengths are included in the conceptualization and/or treatment plan but are not highlighted as such or are mentioned in a way that minimizes their usefulness. For example, adaptive behavior is linked to a thought or mood without commenting on it as something positive or helpful.

    2 = Strengths are included in the conceptualization and recognized as such. These may be incorporated directly into the conceptualization or listed beside the conceptualization as an add-on perspective and are incorporated into treatment plans with explicit discussion of their value for facilitating change. For example, the therapist may propose that familiar strengths are often easier

to practice than new behaviors. Then s/he may ask the client to consider how a particular strength could be used to encourage change along a desired path.

3 = Strengths are consistently incorporated into conceptualizations and treatment plans, often in meaningful and creative ways that are likely to improve treatment response and resilience. For example, there may be several paths within the conceptualization with strengths leading the way on one or more of the paths. A client hobby might be used as a metaphor to remember change options (e.g., a creative cook might think, *when I am missing the ingredients I want for a positive day, I will check and see what ingredients I have and figure out how to make something from them.*)

TIP: Note that this item refers to the conceptualization and treatment plan. Observe the client's response to these discussions. Look for the client to fully participate in discussions of strengths and creative brainstorming for how to use these to reach therapy goals. It is not sufficient for the therapist to didactically identify strengths and prescribe client activities if the client is not in agreement.

13. _____Client aspirations and positive goals are discussed vs. problem focus only (E.g., therapist asks Q's to prompt client consideration of how s/he would like things to be)

0 = Session is completely problem focused with no discussion of positive goals or aspirations even though it would be appropriate to include an aspirational perspective.

1 = Therapist asks client about positive goals or aspirations in a manner that does not encourage or facilitate consideration of these issues. Therapist may look or sound bored, disinterested or skeptical when client discusses positive goals (*Do you really think that is possible?*). Or therapist expresses little interest in these areas relative to a problem focus (*We can talk about these things if there is any time left at the end of the session*). Positive goals are not linked to case conceptualization or problem resolution.

2 = Therapist shows as much interest in and gives equal weight to positive goals and aspirations as to problem-related goals. Therapist encourages client consideration of these issues, allowing silence for the client to consider what s/he wants if the client is not immediately aware of this. Once positive goals are identified, therapist uses these to frame solutions to problems (e.g., *Since you would like to have greater intimacy, perhaps we can consider how this goal might be linked to overcoming your social anxiety.)* When client is pessimistic or hopeless about achieving positive goals, therapist acknowledges perceived barriers and expresses hope on the client's behalf.

3 = Therapist makes positive goals center stage, actively and overtly supporting the client's attainment of positive goals and aspirations (*I can see how important this is for you. Let's work very hard to try and make this happen in your life.)* Therapist demonstrates a great deal of interest in positive goals and aspirations, incorporates these into case conceptualizations, and expresses enthusiasm for these to a degree that matches or increases client's own expressed interest in them. Therapist balances empathy for problems with enthusiasm for positive goals (e.g., *I realize X is quite painful. I wonder how we can find a way through that difficulty so you can achieve Y which means so much to you.)* Even when client expresses hopelessness regarding positive goals, therapist is able to engage client to consider them.

TIP: Look for active therapist expressions of interest and enthusiasm for the client's positive aspirations. If the client wishes for something that is not adaptive (e.g., someone with agoraphobia who wishes to always have a safe companion nearby), the therapist can actively explore what would be good about it and how it would make the client feel. The therapist might support the client's desire to have those outcomes and positive feelings and explore the benefits wanting something even more (i.e., the ability to have these experiences even when alone).

With some presentations (e.g. bipolar, psychosis), therapists will need to adapt their style in line with agreed therapy goals, client values and the therapist's therapeutic agenda.

14. _____ Conceptualization processes highlight what the client is doing well and enhance the client's self-efficacy and/or resilience (E.g., point out ways the client is already resilient; therapist asks about prior resilience, *if we can figure out what worked in similar situations before, we might be able to figure out what you could do here.*)

0 = Client resilience is not mentioned or highlighted in the session even though there are opportunities to do so. Therapist approach to conceptualization shows little awareness or interest in client self-efficacy and resilience. Focus is entirely on client problems and what the client is not doing well.

1 = Therapist or client acknowledges efficacy and/or resilience but this is not used in any meaningful way in the session. Therapist does not use observations of the client doing well to foster self-efficacy or resilience. For example, the therapist might say, *you handled that situation really well*, but not refer to this again in the session or during conceptualization. Therapist seems to lack understanding of resilience models (e.g., does not recognize that resilience comes in many forms, including acceptance of what cannot be changed).

2 = Therapist highlights client resilience on one or more occasions and includes these ideas in conceptualization. Client resilience is linked in a meaningful way to session topics or therapy goals. Therapist makes comments or asks questions to highlight the client's efficacy and/or resilience (e.g., *How did you figure that out? Are you always so persistent? It strikes me that you have been very resilient as a parent. Do you think some of the qualities that make you a resilient parent could help you solve this current difficulty?)*

3 = Therapist consistently captures opportunities to highlight efficacy and/or resilience and links these to therapy issues in ways that move the client toward goals. Awareness of client self-efficacy and/or resilience is in evidence in conceptualization discussions (e.g., by examples given). Therapist is especially adept at capturing self-efficacy and resilience in language that can be easily represented in conceptualizations, including metaphors, images and memorable phrases ("Where shall we put your 'can-do spirit' on this model?)

TIP: Look for therapist and client to actively seek examples of self-efficacy and resilience and incorporate these into conceptualizations. Is there any evidence the client develops a better appreciation in this session for his or her own resilience and how it benefits him or her?

Appendix J

Expanded Results

Missing Data

Three per cent of session-by-session BDI-II scores were missing and no significant correlations were observed between missingness on depression scores and values of other variables that could predict missingness including age, sex, baseline depression, therapist, number of sessions attended, chronicity of depressive episode. Therefore, missing session-by session data may reasonably be assumed to be missing at random; consequently data imputation techniques were not necessitated.

Individual Growth Trajectories

The following graphs depict the depression symptom trajectories over sessions of CBT predicted by the two-level cubic random co-efficient model (shown by the line) for each individual, together with their actual BDI-II scores at each session (shown by the dots). For most, the model provides a good fit to the data, but it is less effective to capture rapid discontinuities in symptom change.

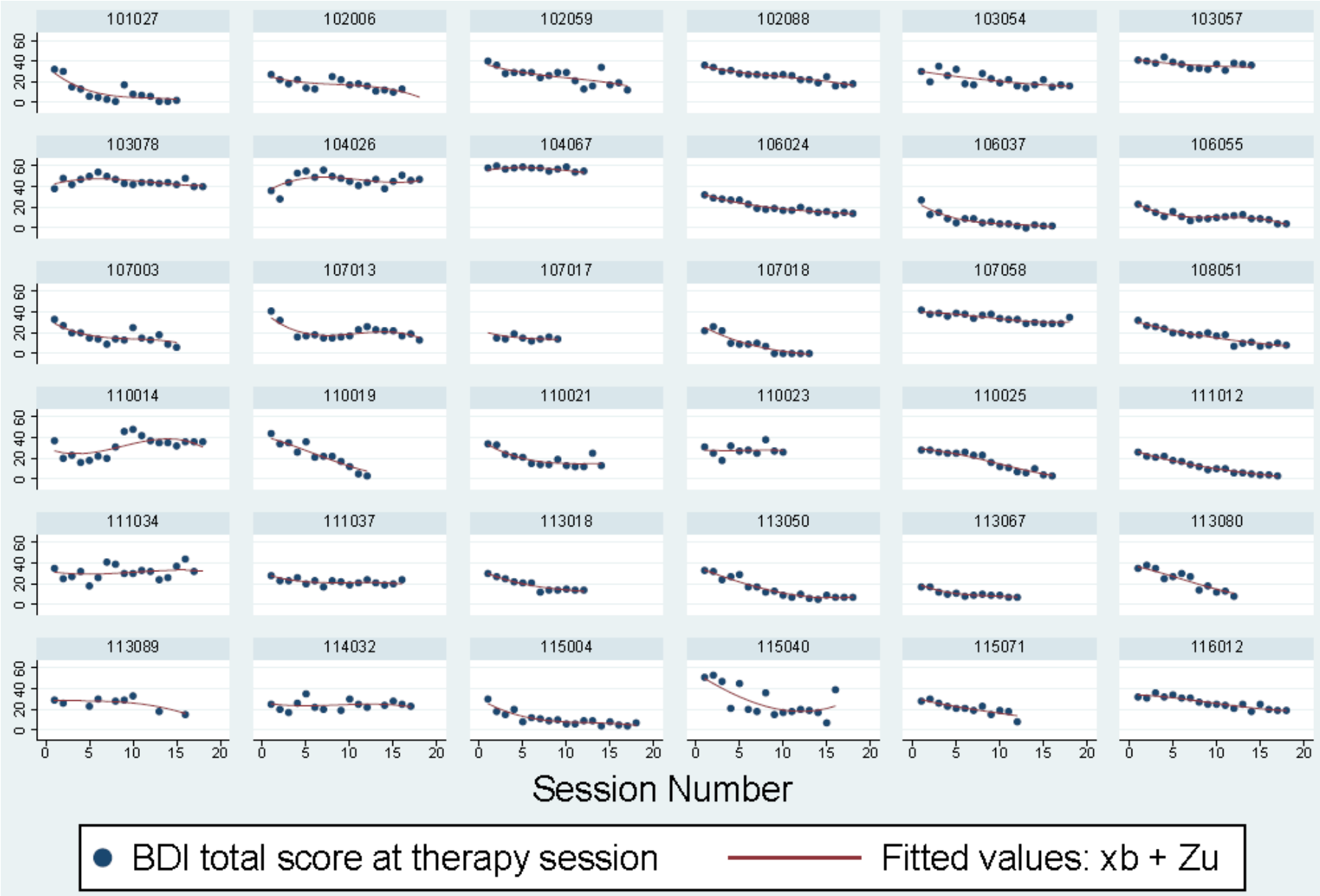
Sudden Gain Reversals

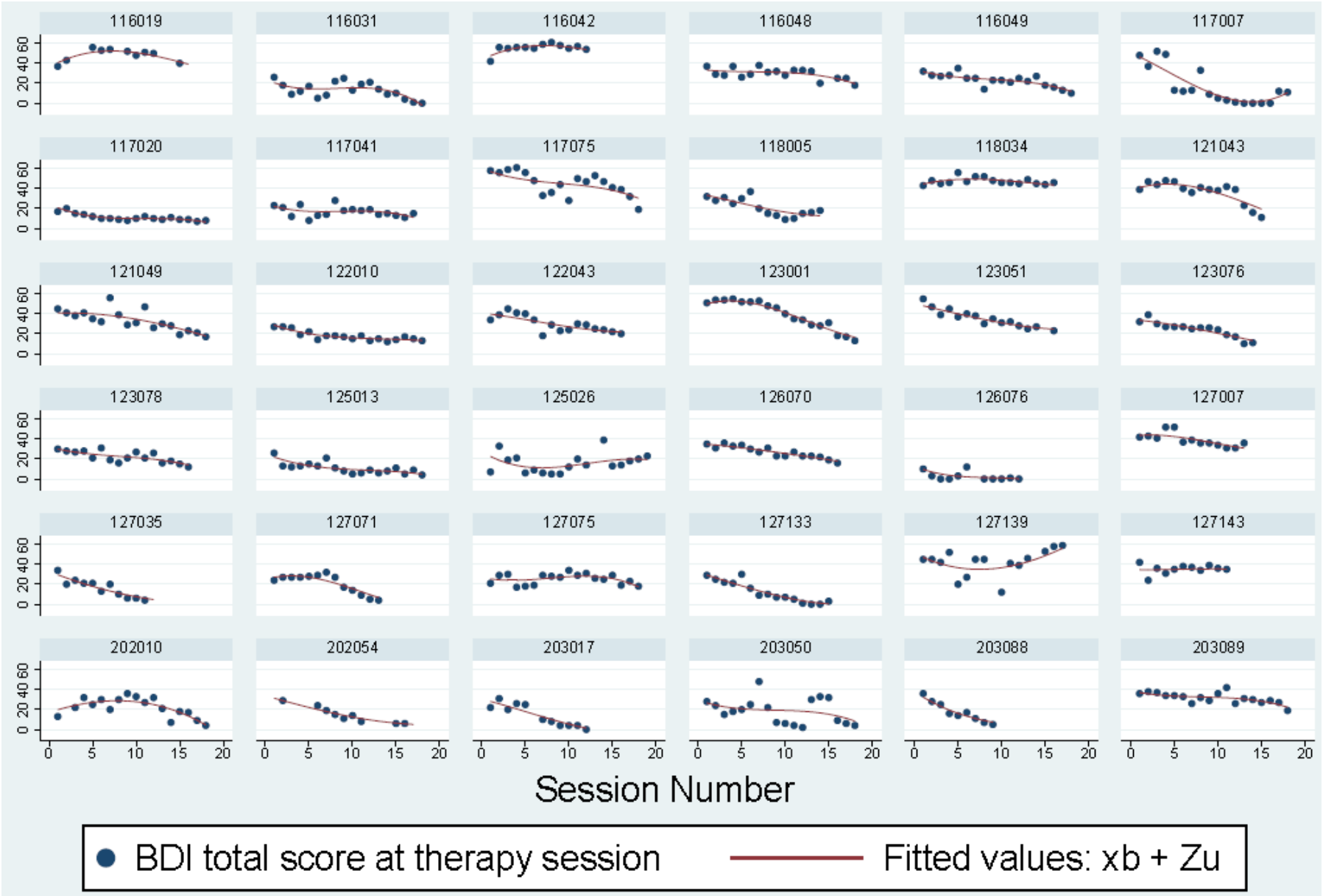
Of the 84 people who experienced sudden gains, 30% experienced a reversal before the end of therapy, suggesting that, for most, sudden gains represented stable improvements.

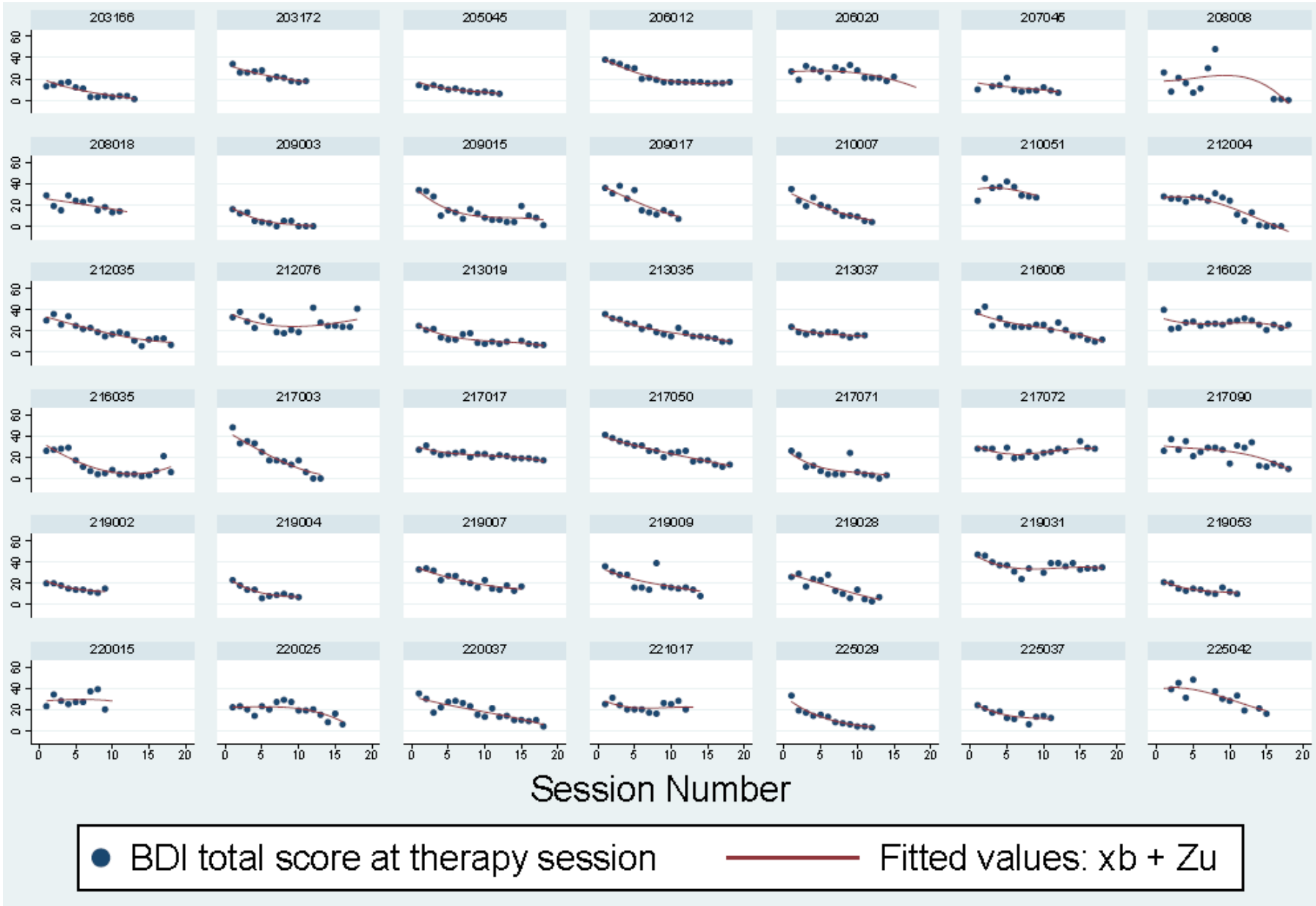
Overlap Between Sudden Gains and Depression Spikes

There was some overlap between depression spikes and sudden gains and so the co-incidence was examined. Forty-four discontinuous patterns (among 36 individuals) were co-incident, meaning that the downward trajectory

of a spike, also met criteria for a sudden gain. This indicates that most gains (63%) and spikes (63%) occurred independently of each other.


101027
102006
102059
102088
103054
103057
103078
104026
104067
106024
106037
106055
107003
107013
107017
107018
107058
108051
110014
110019
110021
110023
110025
111012
111034
111037
113018
113050
113067
113080
113089
114032
115004
115040
115071
116012
0 20 40 60
0 5 10 15 20
Session Number
BDI total score at therapy session
Fitted values: xb + Zu


116019
116031
116042
116048
116049
117007
117020
117041
117075
118005
118034
121043
121049
122010
122043
123001
123051
123076
123078
125013
125026
126070
126076
127007
127035
127071
127075
127133
127139
127143
202010
202054
203017
203050
203088
203089
0 20 40 60
0 5 10 15 20
Session Number
BDI total score at therapy session
Fitted values: xb + Zu


203166
203172
205045
206012
206020
207045
208008
208018
209003
209015
209017
210007
210051
212004
212035
212076
213019
213035
213037
216006
216028
216035
217003
217017
217050
217071
217072
217090
219002
219004
219007
219009
219028
219031
219053
220015
220025
220037
221017
225029
225037
225042
0 20 40 60
0 5 10 15 20
Session Number
BDI total score at therapy session
Fitted values: xb + Zu

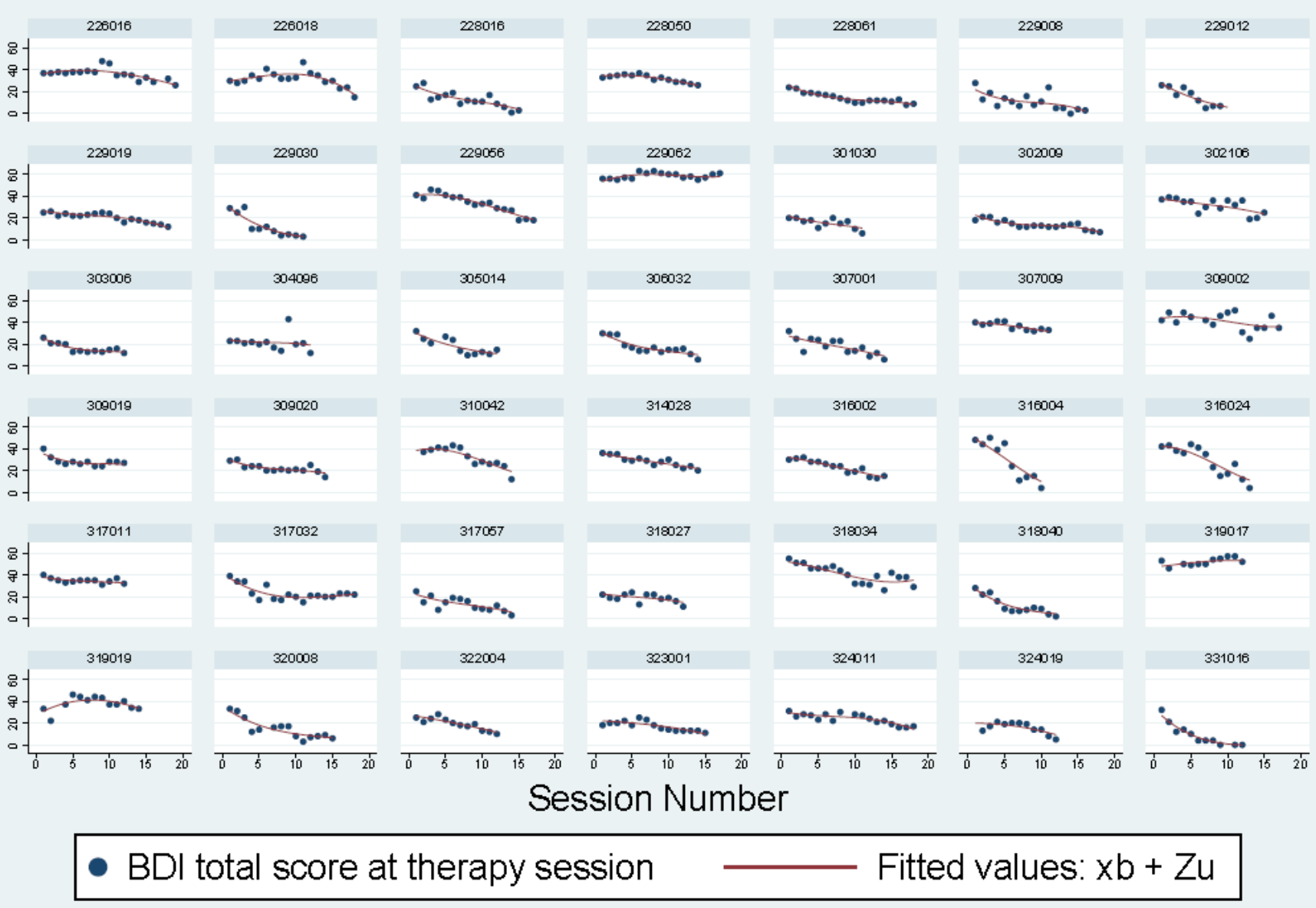


Figure A2. Individual growth trajectories.

Depression at the end of therapy was tested as an alterntive outcome measure in addition to the main analyses reporting depression at 12month follow-up as the principal outcome. ANCOVA tested the effect of sudden gain status on depression at end of therapy, controlling for pre-treatment baseline BDI-II and showed that people who enjoyed sudden gains reported significantly less depression at the end of therapy, after controlling for pre-treatment depression. This replicated the outcomes found with depression at 12month follow-up.

Table A1 and A2 show the inter-relations between outcomes and predictors as measured at the second therapy session and the post-gain session.

Table A1

Zero-order Correlations Between Hope, Processing and Case-conceptualisation Competence as Measured at Session Two, and Depression at Pre-treatment Baseline and 12 months (n=49)

	1	2	3	4	5	6	7	8	9
1. Hope	~								
2. Cognitive emotional processing	0.40**	~							
3. CCCRS Total scale	0.21	0.38**	~						
4. CCCRS Levels subscale	0.24	0.40**	0.94***	~					
5. CCCRS Collaboration subscale	0.05	0.32*	0.86***	0.77***	~				
6. CCCRS Empiricism subscale	0.26	0.42**	0.86***	0.82***	0.72***	~			
7. CCCRS Strengths subscale	0.17	0.16	0.72***	0.56***	0.48***	0.40**	~		
8. Baseline depression (BDI-II)	-0.05	0.15	0.25	0.26	0.23	0.30*	0.06	~	
9. Depression at 12 months (BDI-II)	-0.14	0.03	-0.01	0.01	-0.02	-0.05	0.02	0.49***	~

Note.
CCCRS = Competence in Case Conceptualisation Rating Scale (Padeksy, Kuyken & Dudley, 2011).
BDI-II = Beck Depression Inventory – 2nd Edition (Beck et al., 1996).
*p<.05, **p<.01, ***p<.001

Table A2

Zero-order Correlations Between Hope, Processing and Case-conceptualisation Competence as Measured at Post-gain, and Depression at Pre-treatment Baseline and 12 months (n=25)

	1	2	3	4	5	6	7	8	9
1. Hope	~								
2. Cognitive emotional processing	0.57***	~							
3. CCCRS Total scale	0.17	0.02	~						
4. CCCRS Levels subscale	0.01	-0.04	0.86***	~					
5. CCCRS Collaboration subscale	0.24	0.15	0.68***	0.49**	~				
6. CCCRS Empiricism subscale	-0.10	-0.03	0.86***	0.86***	0.43*	~			
7. CCCRS Strengths subscale	0.36	0.02	0.72***	0.33	0.40*	0.40*	~		
8. Baseline depression (BDI-II)	-0.22	-0.28	0.12	0.24	-0.17	0.24	-0.01	~	
9. Depression at 12 months (BDI-II)	0.04	-0.21	-0.18	-0.20	-0.18	-0.26	0.01	0.22	~

Note.
CCCRS = Competence in Case Conceptualisation Rating Scale (Padeksy, Kuyken & Dudley, 2011).
BDI-II = Beck Depression Inventory – (Beck et al., 1996).
*p<.05, **p<.01, ***p<.001

Table A3 shows the results of models estimating outcome from the predictors individually, after controlling for baseline depression, in order to illustrate their predictive value individually. This shows that only baseline depression significantly predicted depression at 12 months when the predictors were measured at the second therapy session. When the predictors were measured at the pre-gain session, hope, cognitive emotional processing, case-conceptualisation competence (including the levels, collaboration and empiricism domains) significantly predicted depression at 12 months, after controlling for baseline depression. When the variables were measured post-gain, none of the variables significantly predicted depression at 12 months, although this may reflect the lower power to detect a difference, given the smaller sample and the reduced variability in outcome. Only sudden gainers post-gain session was coded due to resource constraints.

Table A3

Regression Table Showing Unstandardised Coefficients (B), Standard Errors (SE) and Standardised Coefficients (β) for Linear Regression Models Estimating the Variables Individually as Predictors of Depression at 12 Months, After Controlling for Pre-treatment (Baseline) Depression Using the BDI-II

	Session 2			"Pre-gain" session			Post-gain session		
Variable	B	SE of B	β	B	SE of B	β	B	SE of B	β
Baseline depression	0.68***	0.18	0.49***	0.61***	0.15	0.44***	0.15	0.18	0.18
Cognitive emotional processing	**-0.67**	**2.25**	**-0.04**	**-7.46*** **	**1.84**	**-0.45*** **	**-1.76**	**2.31**	**-0.16**
Baseline depression	0.66***	0.17	0.48***	0.61***	0.15	0.44***	0.21	0.18	0.24
Hope	**-2.52**	**2.84**	**-0.11**	**-6.91*** **	**1.70**	**-0.45*** **	**0.97**	**2.30**	**0.09**
Baseline depression	0.73***	0.19	0.52***	0.64***	0.17	0.47***	0.21	0.17	0.25
CCCRS, Total scale	**-0.25**	**0.25**	**-0.14**	**-0.62***	**0.25**	**-0.30***	**-0.24**	**0.24**	**-0.21**
Baseline depression	0.72***	(0.19)	0.51***	0.61***	(0.17)	0.45***	0.25	(0.18)	0.29
CCCRS, Levels sub-scale	**-0.61**	**(0.68)**	**-0.12**	**-1.55***	**(0.63)**	**-0.30***	**-0.78**	**(0.61)**	**-0.27**
Baseline depression	0.73***	(0.19)	0.52***	0.63***	(0.17)	0.46***	0.17	(0.18)	0.20
CCCRS, Collaboration sub-scale	**-1.03**	**(0.96)**	**-0.14**	**-1.52**	**(1.02)**	**-0.19**	**-0.77**	**(1.13)**	**-0.14**
Baseline depression	0.77***	(0.19)	0.54***	0.63***	(0.17)	0.46***	0.26	(0.17)	0.30
CCCRS, Empiricism sub-scale	**-1.50**	**(0.97)**	**-0.21**	**-2.14***	**(0.88)**	**-0.29***	**-1.45**	**(0.89)**	**-0.33**
Baseline depression	0.68***	(0.19)	0.48***	0.70***	(0.18)	0.51***	0.19	(0.18)	0.22
CCCRS, Strengths sub-scale	**-0.07**	**(0.84)**	**-0.01**	**-0.88**	**(0.73)**	**-0.15**	**0.03**	**(0.61)**	**0.01**
N		49			49			25	

Note.
CCCRS = Competence in Case Conceptualisation Rating Scale (Padeksy, Kuyken & Dudley, 2011).
BDI-II = Beck Depression Inventory – 2nd Edition (Beck et al., 1996).
* p<0.05, ** p<0.01, *** p<0.001

Regression Diagnostics

All parametric regression models have basic underlying assumptions. In particular, linear and multilevel regression models rely on assumptions of normality and homoscedasticity (Field, 2013). The degree to which these assumptions were met was evaluated by using the residuals to perform standard diagnostic checks.

Growth curve modelling of trajectories of change. The two-level cubic random coefficient model was tested for its conformity to model assumptions. The Figures below illustrate the tests performed.

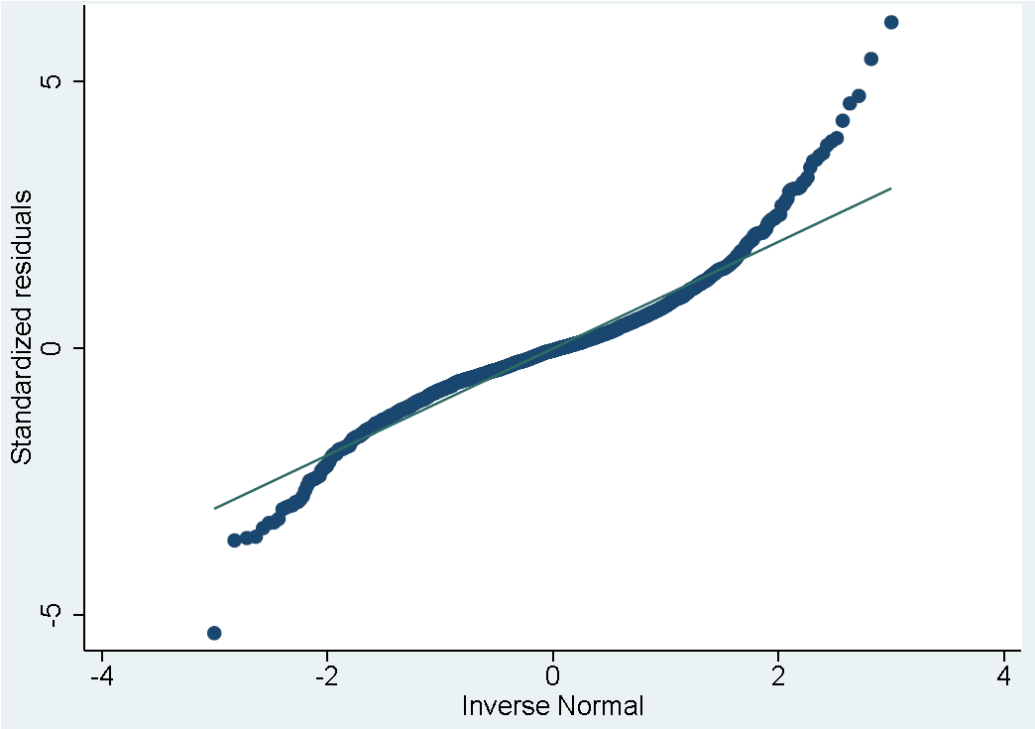


Figure A3. A normal probability plot of standardised level one residuals of the 2-level cubic random coefficient model of depression symptoms over the course

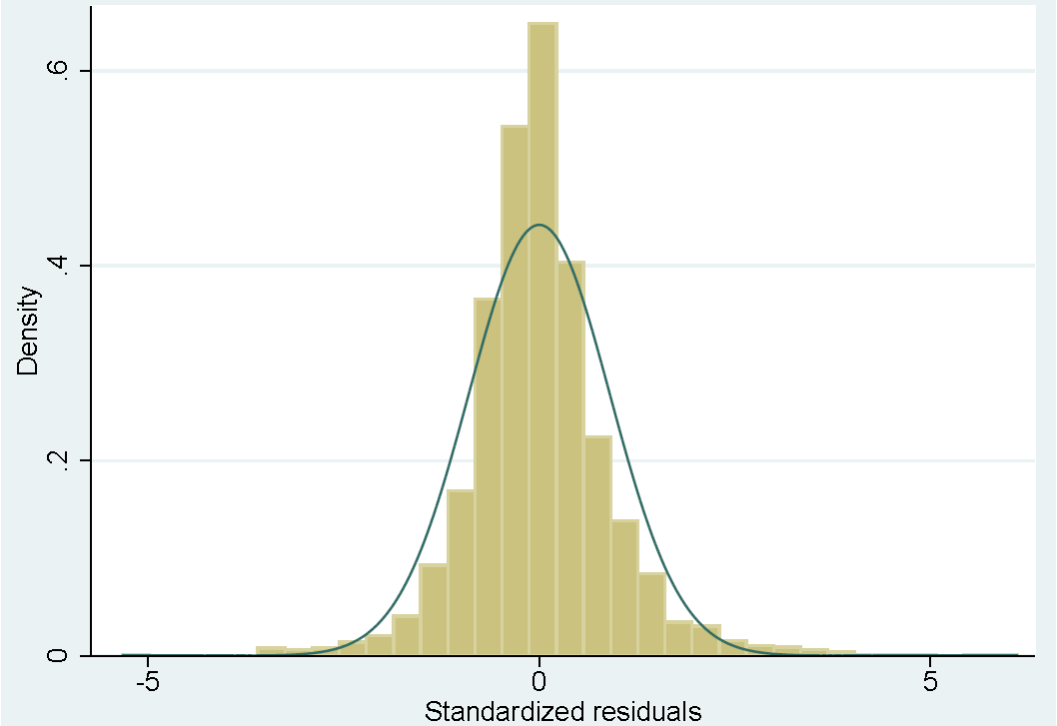


Figure A4. Histogram of level one standardised residuals of the 2-level cubic random coefficient model of depression symptoms over the course of CBT

Figure A3 and A4 illustrate checks for normality in the level one (session) residuals. The residual distribution is symmetric and mostly appears to conform to the assumption of normality, although there is some suggestion of higher "peakedness" than for the normal distribution (i.e. a heavy tailed distribution). Fortunately, the regression assumption that is generally the least important is that the errors are normally distributed (Gelman and Hill, 2007).

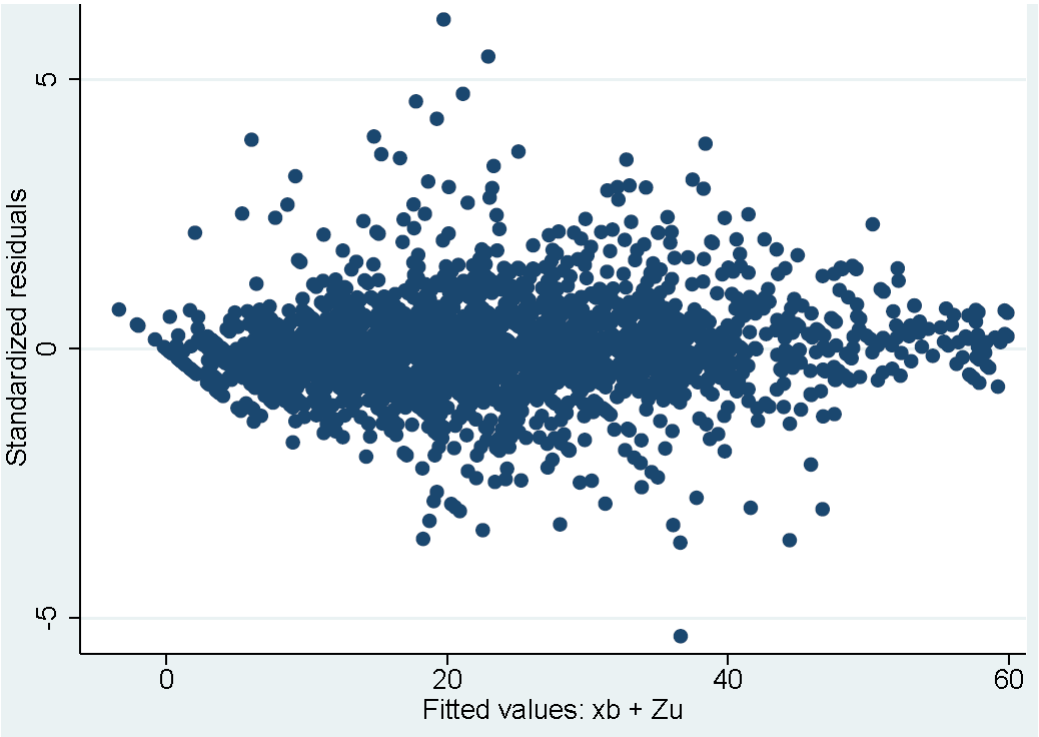


Figure A5. Plot of level one standardised residuals against values predicted by the 2-level cubic random coefficient model of depression symptoms over the course of CBT model, in order to provide a check of the assumption of homoskedasticity.

Figure A5 suggests the standardised residuals tend to vary around zero, and their vertical spread is comparable across the predicted values. Therefore, we may accept the homogeneity assumption as reasonable.

Multiple linear regression estimating depression at 12 months. The multiple linear regression model estimating depression at 12 months from hope, processing, competence in using empirical case-conceptualisations and baseline depression was tested to determine whether assumptions of multiple linear regression were valid. The Figures below illustrate the checks performed to assess whether the standardised residuals were normally distributed and whether the assumption of homoskedasticity was reasonable.

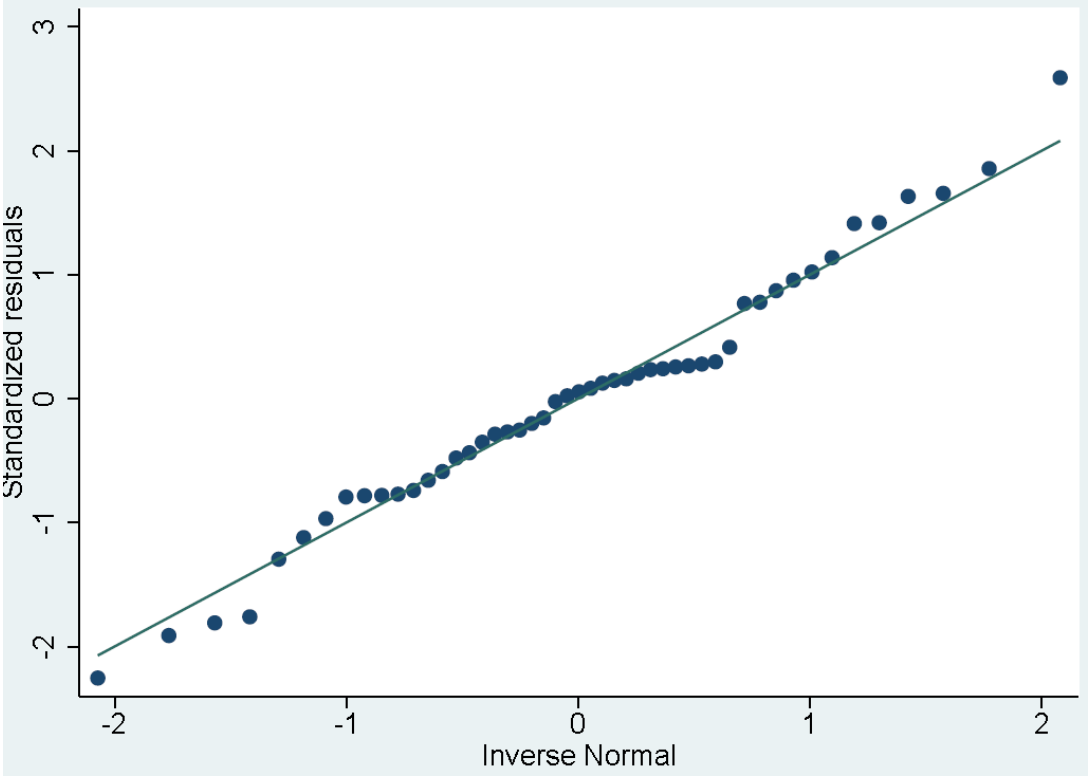


Figure A6. A normal probability plot of standardised residuals to check assumption that residuals are normally distributed.

Figure A6 shows a roughly straight line, with limited deviation from linearity, suggesting that the normal distribution assumption is reasonable.

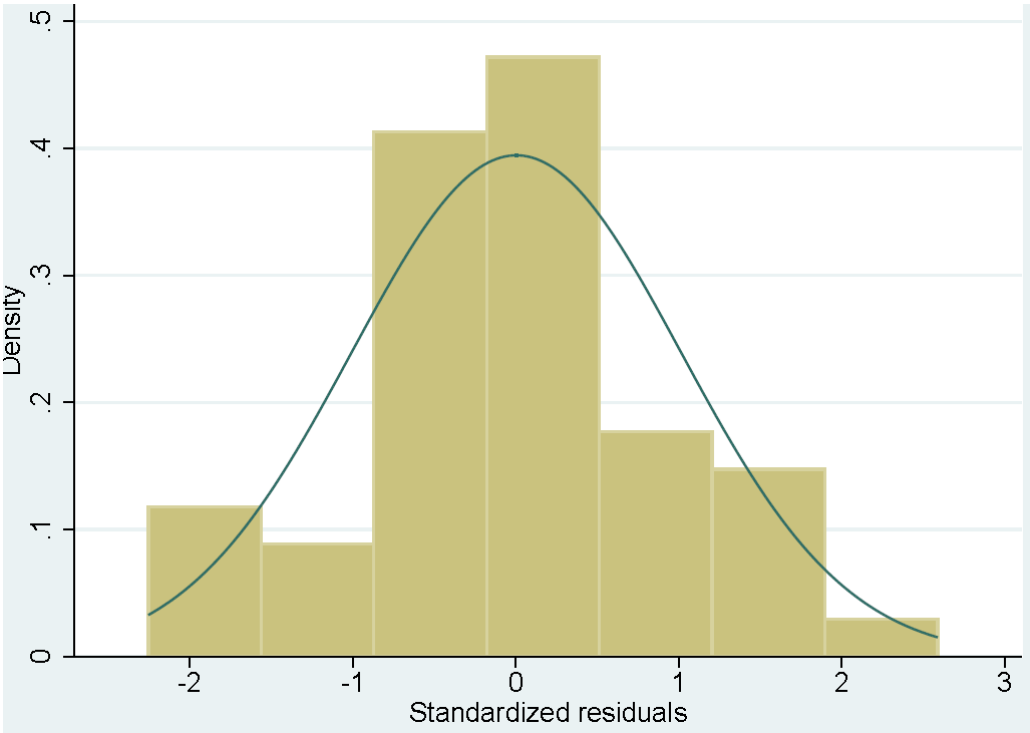


Figure A7. Histogram of standardised residuals against a normal distribution curve.

The histogram in Figure A7 confirms that they normal distribution assumption appears reasonable.

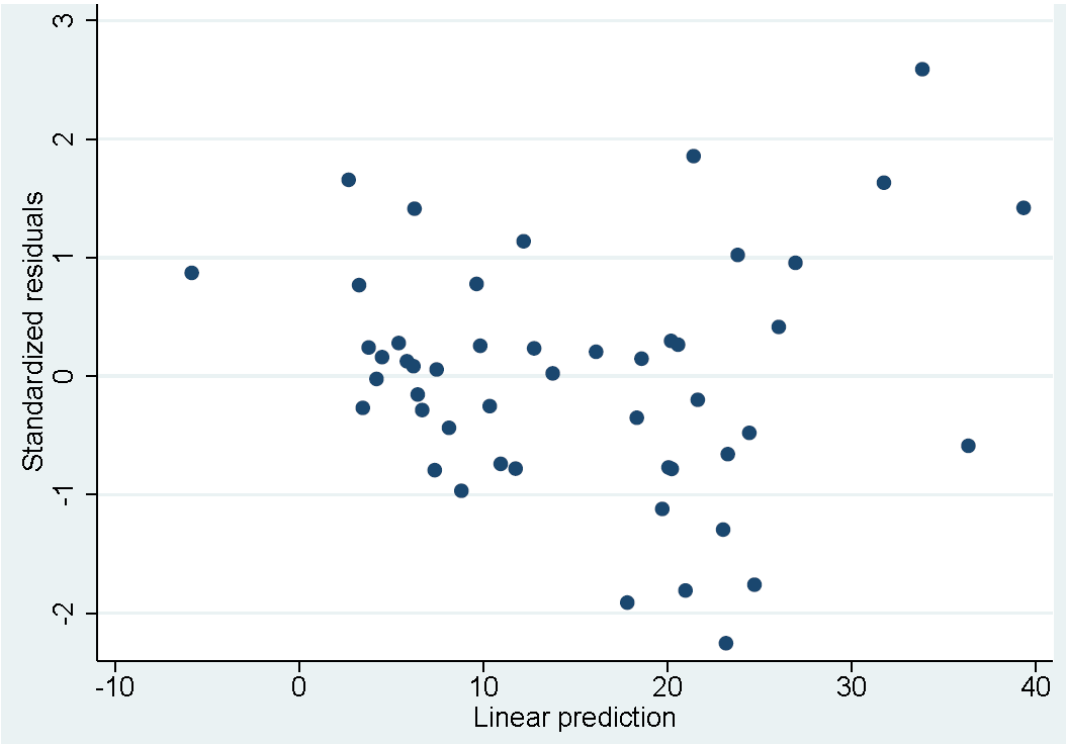


Figure A8. Plot of standardised residuals against the linear prediction provided by the model, in order to provide a check of the assumption of homoscedasticity.

Figure A8 indicates uneven vertical spread of the points across different values of standardised residuals, which might indicate heteroscedasticity. However, less than 5% of residuals fall outside the -2 to +2 range, which is encouraging. It is possible that heterogeneity in residuals is present to some degree, therefore caution is needed in interpreting the probability estimates and confidence intervals (Field, 2013). Possible corrective steps may include a weighted least squares method or log-transforming the dependent variable, however, as this analysis was preliminary, these are not reported here.

Appendix K

Dissemination Statement

The studies reported here will be disseminated in several ways. A manuscript is in preparation to be submitted for publication to the Journal of Consulting and Clinical Psychology. This journal invites submissions on treatment and prevention in all areas of clinical psychology, and welcomes papers investigating mechanisms of therapeutic change. Therefore, this manuscript examining the process of change in cognitive behavioural therapy for depression seems well suited to publication in the Journal of Consulting and Clinical Psychology. The instructions for authors have been followed here (see Appendix L). A poster will also be submitted to present at the annual conference of the British Association of Behavioural and Cognitive Psychotherapies.

Finally, this project was embedded within the CoBalT randomised controlled trial. The main trial findings have already been disseminated to participants. However, the findings reported here can be disseminated to therapists who delivered the CBT in the trial, and who now work in clinical practice settings. Communicating the findings of process research to practising clinicians is important if research is to have real-world effects to optimise treatment.

Appendix L

Journal Instructions for Authors

CLINICAL PSYCHOLOGY REVIEW

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

ISSN: 0272-7358

DESCRIPTION

Clinical Psychology Review publishes substantive reviews of topics germane to **clinical psychology**. Papers cover diverse issues including: psychopathology, psychotherapy, behavior therapy, cognition and cognitive therapies, behavioral medicine, community mental health, assessment, and child development. Papers should be cutting edge and advance the science and/or practice of clinical psychology.

Reviews on other topics, such as psychophysiology, learning therapy, experimental psychopathology, and social psychology often appear if they have a clear relationship to research or practice in **clinical psychology**. Integrative literature reviews and summary reports of innovative ongoing clinical research programs are also sometimes published. Reports on individual research studies and theoretical treatises or clinical guides without an empirical base are not appropriate.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our support pages: http://support.elsevier.com

AUDIENCE

Psychologists and Clinicians in Psychopathy

IMPACT FACTOR

2012: 6.696 © Thomson Reuters Journal Citation Reports 2013

ABSTRACTING AND INDEXING

BIOSIS
Behavioral Medicine Abstracts
Current Contents/Social & Behavioral Sciences
EMBASE
PsycINFO Psychological Abstracts
PsycLIT
Psyscan CP
Research Alert
Social Sciences Citation Index
Social and Behavioural Sciences
Scopus

EDITORIAL BOARD

GUIDE FOR AUTHORS

BEFORE YOU BEGIN

Ethics in publishing

For information on Ethics in publishing and Ethical guidelines for journal publication see http://www.elsevier.com/publishingethics and http://www.elsevier.com/journal-authors/ethics.

Conflict of interest

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. See also http://www.elsevier.com/conflictsofinterest. Further information and an example of a Conflict of Interest form can be found at: http://help.elsevier.com/app/answers/detail/a_id/286/p/7923.

Submission declaration

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see http://www.elsevier.com/postingpolicy), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder.

Changes to authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts:

Before the accepted manuscript is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed.

After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and result in a corrigendum.

Copyright

This journal offers authors a choice in publishing their research: Open access and Subscription.

For subscription articles

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (for more information on this and copyright, see http://www.elsevier.com/copyright). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations (please consult http://www.elsevier.com/permissions). If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases: please consult http://www.elsevier.com/permissions.

For open access articles

Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (for more information see http://www.elsevier.com/OAauthoragreement). Permitted reuse of open access articles is determined by the author's choice of user license (see http://www.elsevier.com/openaccesslicenses).

Retained author rights
As an author you (or your employer or institution) retain certain rights. For more information on author rights for:
Subscription articles please see http://www.elsevier.com/journal-authors/author-rights-and-responsibilities.
Open access articles please see http://www.elsevier.com/OAauthoragreement.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Funding body agreements and policies
Elsevier has established agreements and developed policies to allow authors whose articles appear in journals published by Elsevier, to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit http://www.elsevier.com/fundingbodies.

Open access
This journal offers authors a choice in publishing their research:

Open access
- Articles are freely available to both subscribers and the wider public with permitted reuse
- An open access publication fee is payable by authors or their research funder

Subscription
- Articles are made available to subscribers as well as developing countries and patient groups through our access programs (http://www.elsevier.com/access)
- No open access publication fee

All articles published open access will be immediately and permanently free for everyone to read and download. Permitted reuse is defined by your choice of one of the following Creative Commons user licenses:
Creative Commons Attribution (CC BY): lets others distribute and copy the article, to create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.
Creative Commons Attribution-NonCommercial-ShareAlike (CC BY-NC-SA): for non-commercial purposes, lets others distribute and copy the article, to create extracts, abstracts and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text and data mine the article, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, do not modify the article in such a way as to damage the author's honor or reputation, and license their new adaptations or creations under identical terms (CC BY-NC-SA).
Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND): for non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

To provide open access, this journal has a publication fee which needs to be met by the authors or their research funders for each article published open access.
Your publication choice will have no effect on the peer review process or acceptance of submitted articles.

The publication fee for this journal is **$1800**, excluding taxes. Learn more about Elsevier's pricing policy: http://www.elsevier.com/openaccesspricing.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop (http://webshop.elsevier.com/languageediting/) or visit our customer support site (http://support.elsevier.com) for more information.

Submission

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail.

PREPARATION

Use of word processing software

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: http://www.elsevier.com/guidepublication). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure

Manuscripts should be prepared according to the guidelines set forth in the Publication Manual of the American Psychological Association (6th ed., 2009). Of note, section headings should not be numbered.

Manuscripts should ordinarily not exceed 50 pages, *including* references and tabular material. Exceptions may be made with prior approval of the Editor in Chief. Manuscript length can often be managed through the judicious use of appendices. In general the References section should be limited to citations actually discussed in the text. References to articles solely included in meta-analyses should be included in an appendix, which will appear in the on line version of the paper but not in the print copy. Similarly, extensive Tables describing study characteristics, containing material published elsewhere, or presenting formulas and other technical material should also be included in an appendix. Authors can direct readers to the appendices in appropriate places in the text.

It is authors' responsibility to ensure their reviews are comprehensive and as up to date as possible (at least through the prior calendar year) so the data are still current at the time of publication. Authors are referred to the PRISMA Guidelines (http://www.prisma-statement.org/statement.htm) for guidance in conducting reviews and preparing manuscripts. Adherence to the Guidelines is not required, but is recommended to enhance quality of submissions and impact of published papers on the field.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. **Note: The title page should be the first page of the manuscript document indicating the author's names and affiliations and the corresponding author's complete contact information.**

Author names and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name, and, if available, the e-mail address of each author within the cover letter.

Corresponding author. Clearly indicate who is willing to handle correspondence at all stages of refereeing and publication, also post-publication. **Ensure that telephone and fax numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address.**

Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a "Present address"' (or "Permanent address") may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Abstract

A concise and factual abstract is required (not exceeding 200 words). This should be typed on a separate page following the title page. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separate from the article, so it must be able to stand alone. References should therefore be avoided, but if essential, they must be cited in full, without reference to the reference list.

Graphical abstract

A Graphical abstract is optional and should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership online. Authors must provide images that clearly represent the work described in the article. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See http://www.elsevier.com/graphicalabstracts for examples.
Authors can make use of Elsevier's Illustration and Enhancement service to ensure the best presentation of their images also in accordance with all technical requirements: Illustration Service.

Highlights

Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the artide and should be submitted in a separate file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). See http://www.elsevier.com/highlights for examples.

Keywords

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Footnotes

Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. Many wordprocessors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Table footnotes

Indicate each footnote in a table with a superscript lowercase letter.

Electronic artwork

General points

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the printed version.
- Submit each illustration as a separate file.

A detailed guide on electronic artwork is available on our website:
http://www.elsevier.com/artworkinstructions
You are urged to visit this site; some excerpts from the detailed information are given here.

Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
EPS (or PDF): Vector drawings, embed all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.
Please do not:

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

Color artwork

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article**. Please indicate your preference for color: in print or on the Web only. For further information on the preparation of electronic artwork, please see http://www.elsevier.com/artworkinstructions.
Please note: Because of technical complications which can arise by converting color figures to 'gray scale' (for the printed version should you not opt for color in print) please submit in addition usable black and white versions of all the color illustrations.

Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables

Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

References

Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Sixth Edition, ISBN 1-4338-0559-6, copies of which may be ordered from http://books.apa.org/books.cfm?id=4200067 or APA Order Dept., P.O.B. 2710, Hyattsville, MD 20784, USA or APA, 3 Henrietta Street, London, WC3E 8LU, UK. Details concerning this referencing style can also be found at http://humanities.byu.edu/linguistics/Henrichsen/APA/APA01.html

Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
This journal has standard templates available in key reference management packages EndNote (http://www.endnote.com/support/enstyles.asp) and Reference Manager (http://refman.com/support/rmstyles.asp). Using plug-ins to wordprocessing packages, authors only need to select the appropriate journal template when preparing their article and the list of references and citations to these will be formatted according to the journal style which is described below.

Reference style

References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication. **References should be formatted with a hanging indent (i.e., the first line of each reference is flush left while the subsequent lines are indented).**

Examples: Reference to a journal publication: Van der Geer, J., Hanraads, J. A. J., & Lupton R. A. (2000). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51-59.

Reference to a book: Strunk, W., Jr, &White, E. B. (1979). *The elements of style*. (3rd ed.). New York: Macmillan, (Chapter 4).

Reference to a chapter in an edited book: Mettam, G. R., & Adams, L. B. (1994). How to prepare an electronic version of your article. In B.S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281-304). New York: E-Publishing Inc.

Video data

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 50 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages at http://www.elsevier.com/artworkinstructions. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

AudioSlides

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available at http://www.elsevier.com/audioslides. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

Supplementary data

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at http://www.elsevier.com/artworkinstructions.

3D neuroimaging

You can enrich your online articles by providing 3D neuroimaging data in NIfTI format. This will be visualized for readers using the interactive viewer embedded within your article, and will enable them to: browse through available neuroimaging datasets; zoom, rotate and pan the 3D brain reconstruction; cut through the volume; change opacity and color mapping; switch between 3D and 2D projected views; and download the data. The viewer supports both single (.nii) and dual (.hdr and .img) NIfTI file formats. Recommended size of a single uncompressed dataset is 100 MB or less. Multiple datasets can be submitted. Each dataset will have to be zipped and uploaded to the online submission system via the '3D neuroimaging data' submission category. Please provide a short informative description for each dataset by filling in the 'Description' field when uploading a dataset. Note: all datasets will be available for downloading from the online article on ScienceDirect. If you have concerns about your data being downloadable, please provide a video instead. For more information see: http://www.elsevier.com/3DNeuroimaging.

Submission checklist

The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address
- Phone numbers

All necessary files have been uploaded, and contain:

- Keywords
- All figure captions
- All tables (including title, description, footnotes)

Further considerations
- Manuscript has been 'spell-checked' and 'grammar-checked'
- References are in the correct format for this journal
- All references mentioned in the Reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Web)
- Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print, or to be reproduced in color on the Web (free of charge) and in black-and-white in print
- If only color on the Web is required, black-and-white versions of the figures are also supplied for printing purposes

For any further information please visit our customer support site at http://support.elsevier.com.

AFTER ACCEPTANCE

Use of the Digital Object Identifier

The Digital Object Identifier (DOI) may be used to cite and link to electronic documents. The DOI consists of a unique alpha-numeric character string which is assigned to a document by the publisher upon the initial electronic publication. The assigned DOI never changes. Therefore, it is an ideal medium for citing a document, particularly 'Articles in press' because they have not yet received their full bibliographic information. Example of a correctly given DOI (in URL format; here an article in the journal *Physics Letters B*):
http://dx.doi.org/10.1016/j.physletb.2010.09.059
When you use a DOI to create links to documents on the web, the DOIs are guaranteed never to change.

Online proof correction

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.
We will do everything possible to get your article published quickly and accurately - please upload all of your corrections within 48 hours. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility. Note that Elsevier may proceed with the publication of your article if no response is received.

Offprints

The corresponding author, at no cost, will be provided with a personalized link providing 50 days free access to the final published version of the article on ScienceDirect. This link can also be used for sharing via email and social networks. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's WebShop (http://webshop.elsevier.com/myarticleservices/offprints). Authors requiring printed copies of multiple articles may use Elsevier WebShop's 'Create Your Own Book' service to collate multiple articles within a single cover (http://webshop.elsevier.com/myarticleservices/booklets).

AUTHOR INQUIRIES

For inquiries relating to the submission of articles (including electronic submission) please visit this journal's homepage. For detailed instructions on the preparation of electronic artwork, please visit http://www.elsevier.com/artworkinstructions. Contact details for questions arising after acceptance of an article, especially those relating to proofs, will be provided by the publisher. You can track accepted articles at http://www.elsevier.com/trackarticle. You can also check our Author FAQs at http://www.elsevier.com/authorFAQ and/or contact Customer Support via http://support.elsevier.com.

Journal of Consulting and Clinical Psychology: Instructions to Authors

Prior to submission, please carefully read and follow the submission guidelines detailed below. Manuscripts that do not conform to the submission guidelines may be returned without review.

Length and Style of Manuscripts

Full-length manuscripts should not exceed 35 pages total (including cover page, abstract, text, references, tables, and figures), with margins of at least 1 inch on all sides and a standard font (e.g., Times New Roman) of 12 points (no smaller). The entire paper (text, references, tables, etc.) must be double spaced.

Instructions on preparing tables, figures, references, metrics, and abstracts appear in the *Publication Manual of the American Psychological Association* (6th edition).

Authors submitting manuscripts that report new data collection, especially randomized clinical trials (RCTs), should comply with the newly developed APA Journal Article Reporting Standards (PDF, 98KB) (JARS; see *American Psychologist*, 2008, *63*, 839–851 or Appendix in the *APA Publication Manual*).

For papers that exceed 35 pages, authors must justify the extended length in their cover letter (e.g., reporting of multiple studies), and in no case should the paper exceed 45 pages total. Papers that do not conform to these guidelines may be returned without review.

The References section should immediately follow a page break.

Title of Manuscript

The title of a manuscript should be accurate, fully explanatory, and preferably no longer then 12 words. The title should reflect the content and population studied (e.g., "treatment of generalized anxiety disorders in adults").

If the paper reports a randomized clinical trial (RCT), this should be indicated in the title. Note that JARS criteria must be used for reporting purposes.

Abstract and Keywords

Starting in 2010, all manuscripts published in the *Journal of Consulting and Clinical Psychology* will include a structured abstract of up to 250 words.

For studies that report randomized clinical trials or meta-analyses, the abstract also must be consistent with the guidelines set forth by JARS or MARS (Meta-Analysis Reporting Standards) guidelines, respectively. Thus, in preparing a manuscript, please ensure that it is consistent with the guidelines stated below.

Please include an Abstract of up to 250 words, presented in paragraph form. The Abstract should be typed on a separate page (page 2 of the manuscript), and must include each of the following sections:

- **Objective:** A brief statement of the purpose of the study
- **Method:** A detailed summary of the participants (*N*, age, gender, ethnicity) as well as descriptions of the study design, measures (including names of measures), and procedures
- **Results:** A detailed summary of the primary findings that clearly articulate comparison groups (if relevant), and that indicate significance or confidence intervals for the main findings
- **Conclusions:** A description of the research and clinical implications of the findings

After the abstract, please supply up to five keywords or short phrases.

Participants: Description and Informed Consent

The Method section of each empirical report must contain a detailed description of the study participants, including (but not limited to) the following: age, gender, ethnicity, SES, clinical diagnoses and comorbidities (as appropriate), and any other relevant demographics.

In the Discussion section of the manuscript, authors should discuss the diversity of their study samples and the generalizability of their findings.

The Method section also must include a statement describing how informed consent was obtained from the participants (or their parents/guardians) and indicate that the study was conducted in compliance with an appropriate Internal Review Board.

Measures

The Method section of empirical reports must contain a sufficiently detailed description of the measures used so that the reader understands the item content, scoring procedures, and total scores or subscales. Evidence of reliability and validity with similar populations should be provided.

Statistical Reporting of Clinical Significance

JCCP requires the statistical reporting of measures that convey clinical significance. Authors should report means and standard deviations for all continuous study variables and the effect sizes for the primary study findings. (If effect sizes are not available for a particular test, authors should convey this in their cover letter at the time of submission.)

JCCP also requires authors to report confidence intervals for any effect sizes involving principal outcomes (see Fidler et al., *Journal of Consulting and Clinical Psychology*, 2005, pp. 136–143 and Odgaard & Fowler, *Journal of Consulting and Clinical Psychology*, 2010, pp.287–297).

In addition, when reporting the results of interventions, authors should include indicators of clinically significant change. Authors may use one of several approaches that have been recommended for capturing clinical significance, including (but not limited to) the reliable change index (i.e., whether the amount of change displayed by a treated individual is large enough to be meaningful; see Jacobson et al., *Journal of Consulting and Clinical Psychology*, 1999), the extent to which dysfunctional individuals show movement into the functional distribution (see Jacobson & Truax, *Journal of Consulting and Clinical Psychology*, 1991), or other normative comparisons (see Kendall et al., *Journal of Consulting and Clinical Psychology*, 1999).

The special section of *JCCP* on "Clinical Significance" (*Journal of Consulting and Clinical Psychology*, 1999, pp. 283–339) contains detailed discussions of clinical significance and its measurement and should be a useful resource (see also Atkins et al., *Journal of Consulting and Clinical Psychology*, 2005, pp. 982–989).

Discussion of Clinical Implications

Articles must include a discussion of the clinical implications of the study findings or analytic review. The Discussion section should contain a clear statement of the extent of clinical application of the current assessment, prevention, or treatment methods. The extent of application to clinical practice may range from suggestions that the data are too preliminary to support widespread dissemination to descriptions of existing manuals available from the authors or archived materials that would allow full implementation at present.

Randomized Clinical Trials: Use of JARS Guidelines

JCCP requires the use of JARS guidelines for randomized clinical trials, consistent with the recommendations and policies established by the Publications and Communications Board of the American Psychological Association. JARS offers a standard way to improve the quality of such reports, and to ensure that readers have the information necessary to evaluate the quality of a clinical trial.

Manuscripts that report randomized clinical trials are required to include a flow diagram of the progress through the phases of the trial. When a study is not fully consistent with JARS guidelines, the limitations should be acknowledged and discussed in the text of the manuscript.

For follow-up studies of previously published clinical trials, authors should submit a flow diagram of the progress through the phases of the trial and follow-up. The above checklist information should be completed to the extent possible, especially for the Results and Discussion sections of the manuscript.

Authors of RCTs should also describe procedures to assess for treatment fidelity (also known as treatment integrity), including both therapist adherence and competence. Where possible, results should be reported regarding the relationship between fidelity and outcome found in the investigation.

- View the JARS guidelines (PDF, 98KB)

Meta-Analyses of Randomized Clinical Trials: Use of MARS Guidelines

JCCP requires the use of the APA MARS guidelines for meta-analyses of randomized clinical trials. MARS offers a standard way to improve the quality of such reports, and to ensure that readers have the information necessary to evaluate the quality of a meta-analysis.

Manuscripts that report meta-analyses of randomized clinical trials are required to include a flow diagram of the progress through the stages of the meta-analysis. When a study is not fully consistent with MARS, the limitations should be acknowledged and discussed in the text of the manuscript.

MARS guidelines are included in the JARS guidelines (PDF, 98KB)

Nonrandomized Trials

For nonrandomized designs that often are used in public health and mental-health interventions, *JCCP* requires compliance with JARS.

Failure to comply with JARS or MARS can result in the return of manuscripts without review.

Manuscript Preparation

Prepare manuscripts according to the *Publication Manual of the American Psychological Association* (6th edition). Manuscripts may be copyedited for bias-free language (see Chapter 3 of the *Publication Manual*).

Review APA's Checklist for Manuscript Submission before submitting your article.

Double-space all copy. Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the *Manual*.

Below are additional instructions regarding the preparation of display equations, computer code, and tables.

Display Equations

We strongly encourage you to use MathType (third-party software) or Equation Editor 3.0 (built into pre-2007 versions of Word) to construct your equations, rather than the equation support that is built into Word 2007 and Word 2010. Equations composed with the built-in Word 2007/Word 2010 equation support are converted to low-resolution graphics when they enter the production process and must be rekeyed by the typesetter, which may introduce errors.

To construct your equations with MathType or Equation Editor 3.0:

- Go to the Text section of the Insert tab and select Object.
- Select MathType or Equation Editor 3.0 in the drop-down menu.

If you have an equation that has already been produced using Microsoft Word 2007 or 2010 and you have access to the full version of MathType 6.5 or later, you can convert this equation to MathType by clicking on MathType Insert Equation. Copy the equation from Microsoft Word and paste it into the MathType box. Verify that your equation is correct, click File, and then click Update. Your equation has now been inserted into your Word file as a MathType Equation.

Use Equation Editor 3.0 or MathType only for equations or for formulas that cannot be produced as Word text using the Times or Symbol font.

Computer Code

Because altering computer code in any way (e.g., indents, line spacing, line breaks, page breaks) during the typesetting process could alter its meaning, we treat computer code differently from the rest of your article in our production process. To that end, we request separate files for computer code.

In Online Supplemental Material

We request that runnable source code be included as supplemental material to the article. For more information, visit Supplementing Your Article With Online Material.

In the Text of the Article

If you would like to include code in the text of your published manuscript, please submit a separate file with your code exactly as you want it to appear, using Courier New font with a type size of 8 points. We will make an image of each segment of code in your article that exceeds 40 characters in length. (Shorter snippets of code that appear in text will be typeset in Courier New and run in with the rest of the text.) If an appendix contains a mix of code and explanatory text, please submit a file that contains the entire appendix, with the code keyed in 8-point Courier New.

Tables

Use Word's Insert Table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

Submitting Supplemental Materials

APA can place supplemental materials online, available via the published article in the PsycARTICLES® database. Please see Supplementing Your Article With Online Material for more details.

References

List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the References section.

Examples of basic reference formats:

- **Journal Article:**

Hughes, G., Desantis, A., & Waszak, F. (2013). Mechanisms of intentional binding and sensory attenuation: The role of temporal prediction, temporal control, identity prediction, and motor prediction. *Psychological Bulletin, 139,* 133–151. http://dx.doi.org/10.1037/a0028566

- **Authored Book:**

Rogers, T. T., & McClelland, J. L. (2004). *Semantic cognition: A parallel distributed processing approach.* Cambridge, MA: MIT Press.

- **Chapter in an Edited Book:**

Gill, M. J., & Sypher, B. D. (2009). Workplace incivility and organizational trust. In P. Lutgen-Sandvik & B. D. Sypher (Eds.), *Destructive organizational communication: Processes, consequences, and constructive ways of organizing* (pp. 53–73). New York, NY: Taylor & Francis.

Figures

Graphics files are welcome if supplied as Tiff or EPS files. Multipanel figures (i.e., figures with parts labeled a, b, c, d, etc.) should be assembled into one file.

The minimum line weight for line art is 0.5 point for optimal printing.

For more information about acceptable resolutions, fonts, sizing, and other figure issues, please see the general guidelines.

When possible, please place symbol legends below the figure instead of to the side.

APA offers authors the option to publish their figures online in color without the costs associated with print publication of color figures.

The same caption will appear on both the online (color) and print (black and white) versions. To ensure that the figure can be understood in both formats, authors should add alternative wording (e.g., "the red (dark gray) bars represent") as needed.

For authors who prefer their figures to be published in color both in print and online, original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay:

- $900 for one figure
- An additional $600 for the second figure
- An additional $450 for each subsequent figure

Permissions

Authors of accepted papers must obtain and provide to the editor on final acceptance all necessary permissions to reproduce in print and electronic form any copyrighted work, including test materials (or portions thereof), photographs, and other graphic images (including those used as stimuli in experiments).

On advice of counsel, APA may decline to publish any image whose copyright status is unknown.

Publication Policies

APA policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications.

APA requires authors to reveal any possible conflict of interest in the conduct and reporting of research (e.g., financial interests in a test or procedure, funding by pharmaceutical companies for drug research).

Authors of accepted manuscripts are required to transfer the copyright to APA.

- For manuscripts **not** funded by the Wellcome Trust or the Research Councils UK
  Publication Rights (Copyright Transfer) Form (PDF, 83KB)
- For manuscripts funded by the Wellcome Trust or the Research Councils UK
  Wellcome Trust or Research Councils UK Publication Rights Form (PDF, 34KB)

Ethical Principles

It is a violation of APA Ethical Principles to publish "as original data, data that have been previously published" (Standard 8.13).

In addition, APA Ethical Principles specify that "after research results are published, psychologists do not withhold the data on which their conclusions are based from other competent professionals who seek to verify the substantive claims through reanalysis and who intend to use such data only for that purpose, provided that the confidentiality of the participants can be protected and unless legal rights concerning proprietary data preclude their release" (Standard 8.14).

APA expects authors to adhere to these standards. Specifically, APA expects authors to have their data available throughout the editorial review process and for at least 5 years after the date of publication.

Authors are required to state in writing that they have complied with APA ethical standards in the treatment of their sample, human or animal, or to describe the details of treatment.

- Download Certification of Compliance With APA Ethical Principles Form (PDF, 26KB)

The APA Ethics Office provides the full Ethical Principles of Psychologists and Code of Conduct electronically on its website in HTML, PDF, and Word format. You may also request a copy by emailing or calling the APA Ethics Office (202-336-5930). You may also read "Ethical Principles," December 1992, *American Psychologist*, Vol. 47, pp. 1597–1611.